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In support of our mission, there are no fees to submit or publish manuscripts so that cost will never be a barrier. Typeset and graphics are intentionally simple in order that the journal can be more easily accessed on a variety of devices worldwide to fulfill the mission of the journal.

I hope that the practices discussed in this journal will be helpful to you, our readers.

Sincerely,

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Unlocking Academic Intelligence through Adaptive Pedagogy in the Dawn of Education 5.0 and Industry 5.0

Evangelin Arulselvi Whitehead*

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Abstract

This article explores the pivotal role of adaptive pedagogy in the emerging paradigm of Education 5.0, contextualized against the historical backdrop of Industrial Revolutions 1.0 through 4.0. Tracing the transformation from agrarian economies to mechanized industry, the Industrial Revolution catalyzed profound societal and educational shifts. Today, Industry 5.0 emphasizes human-centric innovation, driving a need for education systems to evolve correspondingly. Adaptive pedagogy harnesses advanced technologies such as artificial intelligence and data analytics to personalize learning, nurturing critical 21st-century skills including creativity, emotional intelligence, and collaborative problem-solving. This dynamic approach bridges the gap between education and the future workforce, ensuring learners are intellectually equipped and socially competent for rapidly changing industrial landscapes. The study highlights how adaptive teaching strategies empower learners by aligning teaching methods with individual needs, thus fostering lifelong learning and resilience. By examining past educational models alongside present technological advancements, this research underscores the integral connection between education and industrial progress, advocating for pedagogical innovation as a driver of sustainable societal development.

Keywords: Adaptive Pedagogy, Education 5.0, Industry 5.0, Personalized Learning, Emotional Intelligence, Lifelong Learning, Technological Innovation

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Introduction

The Industrial Revolution marks the transformative shift from a handicraft-based economy to one dominated by machinery and modern manufacturing technologies. The term "Industrial Revolution" was first popularized by the renowned British economic historian Arnold Toynbee in the late 19th century when he described the profound economic and social changes that Britain experienced between approximately 1760 and 1830 (Britannica, 2025; Rostankowski, n.d.). Before this period, the global economy was primarily agricultural and craft-based, but the industrial era ushered in a new dominance of large-scale industry and mechanized production.

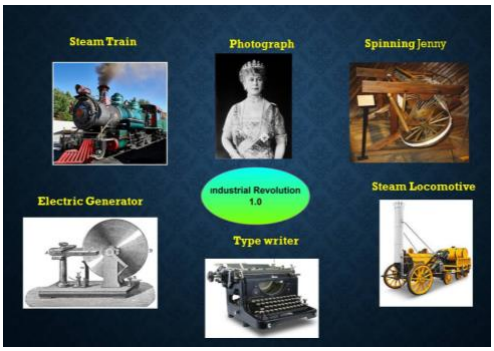
It is worth noting that education has always been closely linked to the industry of each period. There is a continuous and dynamic connection between industrial growth and educational development (Britannica, 2025). To fully understand today's educational innovations, we must begin with where industry itself started and how education evolved alongside it. This revolution brought sweeping transformations not only in technology but also in society and culture. It reshaped economies, enabled new social classes, and redefined urban life. Unsurprisingly, the educational system also underwent significant evolution, adapting to meet the demands of an industrialized world. The journey of education's growth is indeed a revolution spanning from the 18th century through to the present day, where we currently stand amidst Education 4.0, rapidly progressing towards Education 5.0.

Adaptive Pedagogy

Central to this evolution is the concept of adaptive pedagogy, a flexible, personalized teaching approach that adjusts to the individual learning needs, styles, and paces of students (Kang, 2018). In the era of Industry 5.0, where advanced technologies such as artificial intelligence and collaborative robotics emphasize human-centered innovation, adaptive pedagogy bridges the gap between industry and education. Recent studies emphasize that Industry 5.0 prioritizes human-machine collaboration, leveraging artificial intelligence not only to optimize industrial processes but also to foster personalized learning experiences in education (Grasso, 2024; Jobin, Ienca, & Vayena, 2019). Intelligent adaptive systems utilize AI and learning analytics to adjust content dynamically, offering tailored pathways that cultivate creativity, critical thinking, and emotional intelligence—competencies essential for future-ready learners (Luckin et al., 2016; Schleicher, 2019). By leveraging intelligent systems and data analytics, it cultivates essential skills like creativity, critical thinking, and emotional intelligence, aligning education closely with the dynamic demands of contemporary industry. This ensures learners are not only academically intelligent but also equipped to thrive in a future shaped by the synergy of human creativity and technology. Thus, adaptive pedagogy is not just a teaching method; it is the key mechanism through which education evolves in parallel with industrial innovation, ensuring that learners are equipped to contribute effectively to the workforce and society of tomorrow. To fully appreciate the innovations and potentials of Education 5.0, with its focus on adaptive pedagogy and academic intelligence, it is essential to understand the foundational industrial revolutions and their corresponding impacts on educational evolution.

Industrial Revolution 1.0

Figure 1
The Industrial Revolution 1.0 showing key inventions (Author's own work 2025)



Industrial Revolution 1.0 was the first revolution, starting in England in the 18th century and covering the period between 1760 and 1840. Before the Industrial Revolution, the world's economy focused mainly on producing crops and maintaining agriculture. Every nation's economy depended entirely on agricultural production at that time. Most manufactured products were made for personal use, and manufacturing took place in small warehouses on a small scale. The Industrial Revolution was the movement that began at that point, marking a transition from a handicraft economy to a manufacturing sector that used machinery and modern technologies. The Industrial Revolution was evident in Great Britain, the European continent, and the US in the 18th century, and by the beginning of the 20th century, it had spread throughout the world. The Spinning Jenny, an engine for spinning wool and cotton, was a great invention, and it was a key development in the weaving industry. This invention initiated a great transformation of the cotton industry to industrial manufacture (Britannica, 2025; Rostankowski, n.d.). Newcomen's steam engine revolutionized transportation, and these engines were widely used in various sectors, including the mining industry (Britannica, 2025). The telegraph and photograph, invented in 1826, were important inventions during this time; from then on, communication improved a lot (Britannica, 2025). William Burt invented the typewriter in 1829, also called the typographer (Rostankowski, n.d.). The other great inventions in the Industry 1.0 were the electric generator, spinning wheels, water wheels, power steam locomotives, steam boats, steam ships, and so on. Machines used for manufacturing were powered by water and steam.

Education 1.0

Figure 2:
Education 1.0 in the first Industrial Revolution (Author's own work 2025)



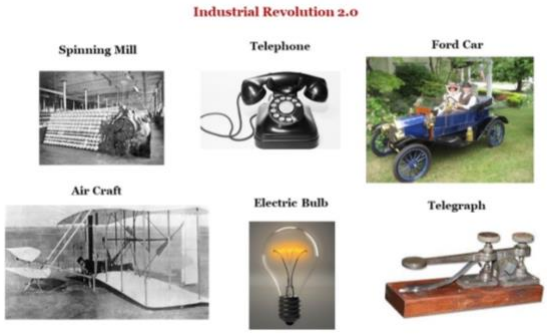
Before the Industrial Revolution 1.0, education was not free; only aristocrats were afforded education. Schools were not free, and poor children had no education. Because most of the people were poor, only the wealthy could afford to send their children to school, which resulted in a less educated nation. Instead of receiving an education, underprivileged youngsters were working in factories. Many children and adults who lived less educated lives lacked basic literacy skills, and that contributed a lot to the country's economy.

Gurukulam system of education in India is a clear example of Education 1.0, where the teacher is the source of knowledge, and it was a teacher-centered approach. The teacher was authoritarian and a primary source of information apart from a few textbooks, and she imparted knowledge as the absolute leader in the classroom. Students were passive recipients with very little regard for their interests, needs, and understanding. There was no technology in the classroom. The 3Rs (Reading, Responding, and Regurgitating) were taught in an all-encompassing one-size-fits-all fashion during the teaching-learning process.

Industrial Revolution 2.0

Figure 3

The Industrial Revolution 2.0 showing key inventions (Author's own work 2025)



Industrial Revolution 2.0 began in the 1870s. Electrical machines were invented, and electrical machines replaced steam-based machines with powerful operations. Steel and alloys were also invented in this period and dominated production industries. The second industrial revolution was described by the historians as 'Technological Revolution,' and it was also described as an 'Era of Mass Production.' It mainly involved using electrical energy to power industrial machines. The most significant technological systems were introduced, enabling more advanced machinery and allowing for greater production

Ransom. E. Olds established Oldsmobile cars in 1901, and this period witnessed a major decrease in the overall pricing of automobiles. Henry Ford initiated the idea of mass production, and he was the father of automotive mass manufacturing. Ford created a new system of using conveyor belts where all vehicles were produced in a step-by-step process. This invention helped in faster production of automobiles, and it was cost-effective too. The second industrial revolution is still regarded as the most significant one because the inventions of the automobile, combustion engines, and aircraft at the beginning of the 20th century are the major reasons for this 2.0 Industrial Revolution.

Education 2.0

Education and higher education 2.0 were a journey from elite education to mass education, and women's education started developing in this period. There was a great transformation from informal education to formal education, and various disciplines were formed in this period. Learners started gaining real-life experience in learning. Communication is a crucial component of Education 2.0 as teachers engage the listening, speaking, reading, writing, and reasoning skills of the learners. They collaborate closely with their teachers, who act as facilitators or orchestrators, and the teaching-learning environment is enhanced by contributions informed by the students' own research. The invention of the printing press changed the dynamics of knowledge production and the system of knowledge.

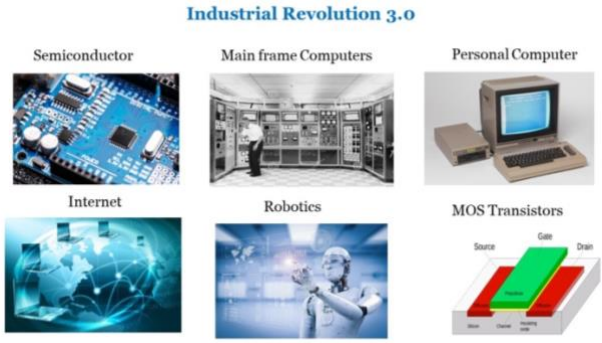
Figure 4:
Education 2.0 in the second Industrial Revolution (Author's own work 2025)



Printed books became the vehicle of knowledge diffusion throughout this time. Renaissance and the Reformation occurred in Education 2.0, and the process of knowledge transmission changed from one-on-one to one-to-many. Many universities were established, and it opened the doors to the common people for higher education. An exam-based approach was in practice in this period, and memorization of knowledge and information was the outcome of the teaching-learning process.

Industrial Revolution 3.0

Figure 5:
The Industrial Revolution in 3.0 showing key inventions (Author's own work 2025)



The Industrial Revolution 3.0 is called the "Digital Revolution" or "First computer era." It began in the 1970s. During this time, simple but powerful computers were created. These computers had decent computational power, and they served as a solid starting point for the creation and development of modern-day machines. Electronics and information technology (IT) were integrated into numerous production processes in the industrial sector, increasing automation in the manufacturing processes. The use of renewable energy in the manufacturing industries, as well as the development and expansion of connectivity and internet access, furthered the automation processes. The first Programmable Logic Controller (PLC) system was developed in 1969 and triggered automated processes using electronics. In this revolution, electronics, telecommunications, and computers were invented. Through the development of new technologies, the third industrial revolution paved the way for research, biotechnology, and space exploration. Despite having automated processes in place, they still required human input and involvement. The great inventions in the Industrial Revolution 3.0 were semiconductors, mainframe computers, personal computers, the World Wide Web, MOS transistors, the internet, renewable electricity, and e-commerce around 1995.

Education 3.0

Education 3.0, in the context of Industrial Revolution 3.0, represented a paradigm shift in the way education was delivered, structured, and experienced. As the world entered the third wave of industrialization, characterized by advanced technologies, interconnected systems, and automation, the education sector realized the need to adapt to the changing landscape and prepare individuals for the new challenges and opportunities that lay ahead.
Education 3.0 emerged as a response to the demands of the rapidly evolving digital age. It recognized that traditional educational models, rooted in the industrial era, were no longer sufficient to equip students with the skills and competencies required to thrive in the knowledge-based economy of the 21st century. In this new era, information was readily available at the click of a button, and the ability to navigate and make sense of this vast sea of knowledge became more critical than ever.

The core philosophy of Education 3.0 revolved around personalized and student-centered learning. Recognizing that each individual has unique strengths, interests, and learning styles, the education system sought to tailor education to the needs of each student. It embraced the idea of individualized learning pathways, where students had the autonomy to choose their areas of focus and progress at their own pace. This shift aimed to foster a sense of ownership and engagement among learners, empowering them to take charge of their education and develop a lifelong love for learning.

Figure 6:
Education 3.0 in the Third Industrial Revolution (Author's own work 2025)



Technology played a pivotal role in enabling Education 3.0. The proliferation of digital tools, online platforms, and smart devices opened up new avenues for learning and collaboration. Virtual classrooms became commonplace, connecting students and teachers from across the globe, transcending geographical boundaries and creating a global learning community. Educational resources, once confined to textbooks, were now available in the form of interactive multimedia, virtual simulations, and augmented reality experiences, making learning more immersive, engaging, and relevant.

Moreover, Education 3.0 emphasized the development of 21st-century skills, such as critical thinking, problem-solving, creativity, collaboration, and digital literacy. Recognizing that these skills were essential for success in the modern workforce, the education system integrated them into the curriculum across all disciplines. Project-based learning and real-world applications became the norm, as students were encouraged to apply their knowledge to solve authentic problems and engage in hands-on experiences. This approach aimed to bridge the gap between academia and the workplace, ensuring that students were well-prepared to navigate the complex challenges of the industrial revolution.

Furthermore, Education 3.0 embraced lifelong learning as a fundamental principle. In a rapidly changing world, where technologies and industries evolve at an unprecedented pace, the ability to adapt and learn continuously became paramount. The education system recognized that education should extend beyond the traditional boundaries of schools and universities, encompassing professional development, upskilling, and reskilling throughout one's career. Lifelong learning platforms and micro-credentialing systems emerged, allowing individuals to acquire new skills and credentials at their convenience, and thereby staying relevant in a dynamic job market.

Education 3.0 in the context of Industrial Revolution 3.0 represents a transformative approach to education, adapting to the needs of a digital and interconnected world. It embraces personalized learning, leverages technology, fosters 21st-century skills, and promotes lifelong learning. By doing so, it equips individuals with the knowledge, competencies, and adaptability necessary to thrive in the ever-evolving landscape of the industrial revolution.

Industrial Revolution 4.0

Industrial Revolution 4.0, also known as the Fourth Industrial Revolution or Industry 4.0, is a term used to describe the ongoing transformation of the global industrial and manufacturing sectors through the integration of advanced technologies, digitalization, and automation. It represents a new era of innovation and disruptive change, characterized by the fusion of physical, digital, and biological systems.

Figure 7

The Industrial Revolution in 4.0 showing key inventions (Author's own work 2025)



At its core, Industrial Revolution 4.0 is driven by several key technological advancements. These include the Internet of Things (IoT), artificial intelligence (AI), big data analytics, robotics, additive manufacturing (3D printing), cloud computing, Data Analytics, augmented reality, virtual reality, cybersecurity and advanced materials. These technologies work in synergy to create intelligent, interconnected systems that have the potential to revolutionize industries and reshape the way we live, work, and interact.

One of the defining features of Industrial Revolution 4.0 is the concept of a "smart factory" or "digital factory." In this model, traditional manufacturing processes are enhanced and optimized through the integration of digital technologies and real-time data analytics. Machines, equipment, and products are interconnected through IoT, enabling seamless communication, automation, and monitoring. This leads to increased efficiency, productivity, and flexibility in production processes, as well as the ability to customize products to individual customer needs. The use of AI and machine learning plays a significant role in Industrial Revolution 4.0. Intelligent systems can analyze vast amounts of data, identify patterns, and make informed decisions in real-time. This enables predictive maintenance, quality control, supply chain optimization, and resource management. AI-powered robots and autonomous vehicles are also being deployed in various industries, reducing human intervention and increasing efficiency in tasks ranging from assembly lines to logistics and transportation.

Industrial Revolution 4.0 has far-reaching implications for the labor market and the skills required by the workforce. While automation and AI have the potential to streamline operations and improve productivity, they also raise concerns about job displacement. However, new roles and opportunities emerge, emphasizing the importance of skills such as critical thinking, problem-solving, creativity, adaptability, and digital literacy. The workforce needs to adapt and acquire these skills to remain relevant in a digitally driven economy.

Another significant aspect of Industrial Revolution 4.0 is the digitalization of products and services. The increased connectivity and data exchange enable the development of innovative business models and the creation of new value chains. Concepts such as the Internet of Things, augmented reality, and digital platforms transform how products are designed, produced, distributed, and consumed. This opens up new possibilities for customization, personalization, and customer engagement.

However, as with any major societal shift, Industrial Revolution 4.0 also presents challenges and risks. Issues such as cybersecurity, data privacy, ethical considerations, and the digital divide need to be addressed to ensure the responsible and inclusive implementation of these technologies. Additionally, there is a need for collaboration between industry, governments, and educational institutions to foster a supportive ecosystem that promotes innovation, upskilling, and lifelong learning.

In summary, Industrial Revolution 4.0 represents the convergence of advanced technologies and digitalization, transforming industries and societies worldwide. It brings forth opportunities for increased productivity, efficiency, and customization, while also demanding the development of new skills and the careful management of challenges. By embracing the potential of these technologies and fostering a holistic approach, societies can navigate this revolution to create a more sustainable and prosperous future.

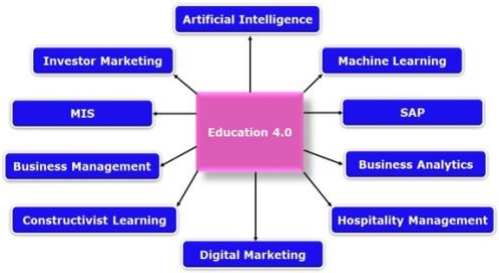
Education 4.0

In September 2021, the term "Education 4.0" was not widely used in the context of Industrial Revolution 4.0. The concept of Education 4.0 is an extrapolation from the previous discussions

of Education 3.0 and the integration of advanced technologies into the education sector. However, it is important to note that the term "Education 4.0" is not as commonly recognized or defined as Industrial Revolution 4.0 itself.

Figure 8

Education 4.0 in the Fourth Industrial Revolution (Author's own work 2025)



That being said, in the context of Industrial Revolution 4.0, there is a growing recognition of the need to transform education to align with the demands of a rapidly changing digital and technological landscape. Education systems around the world are grappling with the challenges and opportunities presented by the Fourth Industrial Revolution. In the face of automation, artificial intelligence, and other emerging technologies, there is an increasing emphasis on developing future-ready skills and competencies among students. This includes skills such as critical thinking, problem-solving, creativity, digital literacy, collaboration, and adaptability. The goal is to equip learners with the capabilities needed to navigate the complexities of the modern workforce and to foster a lifelong love for learning.

To address these needs, educational institutions are exploring innovative approaches and incorporating advanced technologies into their teaching and learning practices. This may involve integrating digital tools, online platforms, virtual reality, augmented reality, and artificial intelligence into the curriculum. The aim is to create engaging and interactive learning experiences that promote active participation, personalized learning pathways, and the acquisition of 21st-century skills.

In Education 4.0, a Student-Centered approach is central and essential, transforming the traditional classroom dynamics. The teacher is transformed into a coordinator/facilitator, advisor, learner, and practice guide, supporting the student's journey rather than dictating it. The flipped classroom method applies, encouraging students to engage with content outside of class and utilize classroom time for deeper exploration, investigation, and discussion. The student is researching, utilizing abundant resources and technology, fostering an environment where self-learning is ubiquitous. With more dialogue and technology everywhere, the classical style classroom no longer exists, giving way to flexible, dynamic spaces. Furthermore, Lesson Plans are now called Learning Plans, reflecting the adaptive and personalized nature of modern education.

Additionally, the concept of lifelong learning has gained prominence in the context of Industrial Revolution 4.0. The rapid pace of technological advancements and evolving job market requirements necessitate continuous learning and upskilling throughout one's career. Lifelong learning initiatives, such as online courses, micro-credentials, and professional development programs, are being developed to provide individuals with opportunities to acquire new knowledge and skills and adapt to the changing demands of the digital age. While the full implementation and impact of Education 4.0 in the Industrial Revolution 4.0 era are still

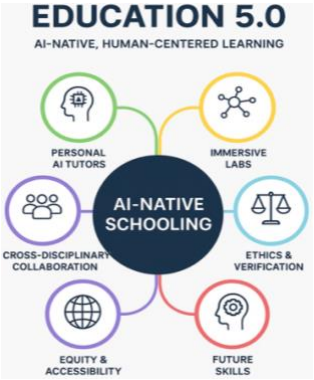
evolving, it is clear that there is a growing recognition of the need for educational transformation. Governments, educational institutions, and stakeholders are increasingly focused on preparing learners for the digital era by integrating technology, fostering future-ready skills, and promoting lifelong learning. The specific strategies and approaches may vary across different countries and educational systems, but the overarching goal is to align education with the demands of the Fourth Industrial Revolution.

Industrial Revolution 5.0

Revolution 5.0, also known as the Fifth Industrial Revolution, represents a significant shift towards integrating advanced technologies with a focus on human-centric development. This era builds upon the digital and automation advancements of Industry 4.0 by emphasizing collaboration between humans and machines, ethical considerations, and sustainable practices. Unlike previous industrial revolutions that prioritized automation and efficiency, Revolution 5.0 places a strong emphasis on the synergy between humans and machines. Collaborative robots, or cobots, work alongside human workers, enhancing productivity, safety, and job satisfaction by taking over repetitive and hazardous tasks while humans focus on more complex and creative aspects (Antonio, 2024). Environmental sustainability is a core tenet of Revolution 5.0. The focus is on developing technologies and processes that minimize environmental impact, promote renewable energy sources, and support circular economy principles. This shift aims to address the global challenges of climate change and resource depletion by fostering innovations that are both economically viable and ecologically responsible (HGS, 2024). Ethical considerations in AI development are paramount in Revolution 5.0. This includes ensuring that AI systems are transparent, fair, and accountable, thus preventing biases and promoting inclusivity. The goal is to create AI that augments human capabilities without replacing them, ensuring that technological advancements benefit society as a whole (Antonio, 2024). Advanced data analytics and AI enable highly personalized experiences across various sectors. Products and services can be tailored to meet individual needs and preferences, enhancing user satisfaction and engagement. This level of customization is expected to become a standard, particularly in education, healthcare, and consumer goods [2]. Revolution 5.0 also addresses the importance of digital well-being. With the increasing integration of digital technologies into daily life, there is a growing need to balance digital engagement with mental and physical health. Initiatives aimed at reducing digital addiction, promoting healthy digital habits, and ensuring equitable access to technology are crucial components of this revolution [3]. Revolution 5.0 emphasizes the need for continuous learning and skill development to keep pace with rapid technological advancements. Educational systems and corporate training programs are evolving to provide lifelong learning opportunities, ensuring that individuals can adapt to new roles and industries as technology progresses [3]. Revolution 5.0 marks a transformative period where technological innovation is deeply intertwined with human values, ethical practices, and sustainable development. It aims to create a future where technology enhances the human experience, supports environmental sustainability, and promotes equitable and inclusive growth.

Education 5.0 -the AI-Native Learning Revolution

Figure 9
Education 5.0 in the Fifth Industrial Revolution (Author's own work 2025)



Cognizant (2025) describes Education 5.0 as a paradigm that goes beyond digital tools—it is "a tech-enhanced reimagining of how we learn and, just as importantly, how we teach." Education 5.0 is an AI-native, human-centered educational system where advanced platforms akin to OpenAI act as the foundational learning operating system. In this paradigm, every learner is paired with a persistent personal AI tutor; multi-agent AI tutors facilitate labs, assessments, and research activities; content is generated and verified on demand; and credentials are granular, verifiable, and portable. Beyond enhanced personalization, Education 5.0 orchestrates AI agents to verify truth, steward data responsibly, translate knowledge across disciplines, and close the loop from ideas to deployable innovations. In this environment, teachers conduct the AI orchestra, while students evolve into builders, researchers, and entrepreneurs, equipped to tackle problems that do not yet exist (Uqualio, 2025).

This model marks a decisive shift from Education 4.0, transcending mere digitalization and personalization to become truly AI-native schooling. Here, frontier AI technologies serve as the core educational platform across all disciplines—whether physics, medicine, law, or art—powered by AI-driven simulations, real-time language translation, automated research, and adaptive learning resources. Assessments are reimagined through AI-mediated vivas, virtual laboratories, and skill credentials that constitute dynamic, living records of learner competencies. The skill sets demanded in Education 5.0 extend beyond conventional digital literacy, requiring mastery of AI orchestration, data stewardship, truth verification, cross-disciplinary translation, and human-AI ethical frameworks. Simultaneously, learners cultivate creativity, adaptability, and resilience essential for future success. Rather than passive knowledge consumers, students participate as active designers of experiments, developers of products, and initiators of ventures, all supported by intelligent AI agents (Arxiv authors, 2023).

Importantly, Education 5.0 humanizes learning amidst AI's pervasive role by prioritizing equity, global accessibility, multilingual support, and accessibility features. It safeguards academic integrity through provenance tracking, bias audits, and active teacher oversight. Educators transition into the role of conductors of an AI orchestra, mentoring students to engage critically, ethically, and creatively with knowledge and technology. This holistic approach ensures that Education 5.0 equips learners not only with technical competencies but also with the

socio-emotional and ethical skills vital for navigating the complexities of the future (IRMA International, n.d.).

Adaptive Pedagogy

Adaptive pedagogy is a progressive educational technique emerging strongly in the 21st century that tailors teaching strategies and learning experiences to the unique needs of each student. It uses data-driven methods, often supported by educational technologies and artificial intelligence, to continuously assess learners' progress, engagement, and understanding. This adaptive approach allows for real-time adjustment of content, pace, and instructional methods, making education more personalized, equitable, and effective. Unlike traditional one-size-fits-all curricula, adaptive pedagogy recognizes that every learner differs in prior knowledge, learning speed, and style, enabling educators to provide targeted support and challenge where needed (Montclair State University, 2018).

Figure 10

Adaptive Pedagogy in the Education 5.0 Classroom (Author's own work, 2025)



Implementing adaptive pedagogy results in a dynamic learning environment where lessons evolve based on students' responses and mastery, promoting higher retention and motivation. Schools worldwide are integrating this approach through technology-enhanced platforms that track student performance and modify learning pathways accordingly (BGSVijnatham, 2020). Furthermore, adaptive pedagogy fosters inclusivity by addressing diverse learner profiles and supports educators with data to make informed instructional decisions that meet the evolving educational needs of their students (EuroKids, 2025).

Adaptive Pedagogy: A Gift to Transform Education 5.0 in the 21st Century

Adaptive pedagogy is a revolutionary teaching approach that aligns perfectly with the goals of Education 5.0 by offering a personalized, learner-centered educational experience. In the 21st century, where learners' needs and learning styles vary widely, adaptive pedagogy enables educators to tailor instruction dynamically using real-time data and AI-driven tools. This responsiveness ensures that every student receives the right support at the right time, making learning more engaging, relevant, and effective. By integrating adaptive strategies, Education 5.0 fosters deeper understanding, equitable access, and improved motivation among students, transforming the educational landscape with technology-enhanced personalization (Uqualio, 2025; Arxiv authors, 2023).

One of the greatest gifts of adaptive pedagogy to Education 5.0 is its power to narrow attainment gaps and promote inclusivity. Struggling learners gain targeted assistance through scaffolded resources and differentiated activities, while advanced learners receive appropriate

challenges to maintain engagement. This personalization helps reduce disparities caused by socioeconomic factors, learning disabilities, or remote access issues. Moreover, adaptive pedagogy equips teachers with data-driven insights to make informed decisions and refine their instructional methods continuously, thus increasing teaching effectiveness and responsiveness to students' evolving needs (EuroKids, 2025; Uqualio, 2025).

Figure 11
Adaptive Pedagogy in the Education 5.0 (Author's own work, 2025)



Another critical advantage lies in fostering critical 21st-century skills such as creativity, adaptability, problem-solving, and resilience. Adaptive learning environments encourage students to explore content interactively and explore interdisciplinary connections at their own pace, supported by AI-guided experimentation and feedback. This builds not only knowledge but also the flexibility and confidence required for lifelong learning and innovation. As learners progress through personalized pathways, they become active participants in knowledge creation and application, ready to solve complex, unpredicted challenges of the future (Arxiv authors, 2023; EuroKids, 2025).

Adaptive pedagogy humanizes the technologically sophisticated ecosystem of Education 5.0 by emphasizing student-centeredness, empathy, and ethical use of AI. It balances data and automation with teacher mentorship and socio-emotional support, nurturing holistic development and critical engagement. By doing so, it ensures that learning is not only efficient but also meaningful and equitable in this rapidly evolving digital era. Thus, adaptive pedagogy serves as a foundational pillar in realizing the promise of Education 5.0—preparing learners to thrive in the knowledge economy of the 21st century and beyond (Uqualio, 2025; Arxiv authors, 2023; EuroKids, 2025).

1. AI-Driven Learning

Artificial Intelligence (AI) plays a pivotal role in Education 5.0 by enabling highly personalized learning experiences. Through AI-powered systems, learners receive tailored recommendations, adaptive assessments, and immediate, real-time feedback. These systems analyze individual learning patterns and needs, thus offering customized content and support that enhance engagement and outcomes (Luckin et al., 2016). Such personalized pathways help address diverse learning paces and styles, making education more efficient and effective.

2. Emotional Intelligence (EI)

Education 5.0 emphasizes the importance of Emotional Intelligence to prepare learners for the complex social and professional environments of the future. Developing skills like empathy,

resilience, teamwork, and self-awareness fosters holistic growth and social competence (Goleman, 1998). Integrating EI into curricula ensures students not only excel cognitively but also manage emotions and relationships adeptly, which are crucial for success in the 21st century (Brackett et al., 2011).

3. Collaborative & Experiential Learning

In the framework of Education 5.0, learning transcends traditional textbook methods by incorporating group projects, real-world problem-solving, and hands-on activities. This approach nurtures critical thinking, creativity, and effective communication among learners (Vygotsky, 1978). Experiential learning in collaborative settings helps students apply theoretical knowledge to practical scenarios, thus deepening understanding and preparing them for future teamwork-centric workplaces (Kolb, 1984).

4. Lifelong Learning and Reskilling

Education 5.0 recognizes the necessity of continuous learning to keep pace with rapid technological and economic changes. Lifelong learning and reskilling initiatives equip individuals to adapt to evolving job markets, particularly with the emergence of Industry 5.0's human-centric automation (Schleicher, 2019). Encouraging self-directed learning and ongoing professional development ensures learners remain competitive and capable of navigating future career shifts.

5. Ethical AI

The responsible use of AI within Education 5.0 mandates strict adherence to ethical guidelines concerning privacy, fairness, transparency, and accountability. Safeguarding learners' data and ensuring unbiased AI algorithms prevents discrimination and promotes trust in educational technologies (Jobin, Ienca, & Vayena, 2019). Ethical AI frameworks are essential to preserve the integrity of education systems while leveraging technological advancements.

6. Continuous Assessment

Data-driven continuous assessment powered by AI analytics offers timely insights into learner progress, enabling instructors to tailor interventions and improve instructional methods (Black & Wiliam, 1998). Unlike traditional summative assessments, continuous formative assessments provide ongoing feedback, fostering a more adaptive and responsive learning environment (Shute, 2008). This approach supports personalized learning journeys aligned with individual student needs.

7. Real-World Learning

Education 5.0 integrates project-based and hands-on learning experiences connected to authentic problems, workplaces, and societal issues. This real-world orientation helps learners understand the relevance of their education and develop practical skills applicable beyond the classroom (Dewey, 1938). Engagement with community impact projects encourages social responsibility and prepares students to contribute meaningfully to society.

8. Equity & Inclusion

Ensuring equitable access and personalized support for all learners, irrespective of their socioeconomic background, abilities, or geographic location, is a cornerstone of Education 5.0 (UNESCO, 2020). Inclusive pedagogy leverages technology to break down barriers, providing

differentiated learning pathways and resources to accommodate diverse learner needs (Florian & Black-Hawkins, 2011). This commitment fosters a just education system that empowers every individual.

Conclusion

Adaptive pedagogy emerges as a groundbreaking catalyst in advancing Education 5.0, redefining the educational paradigm for the complexities of the 21st century and beyond. By seamlessly integrating cutting-edge AI technologies with deeply human-centered teaching, it transcends traditional pedagogical models to offer dynamic, data-driven personalization that honors each learner's unique trajectory. This paradigm shift not only promotes equity and inclusivity by bridging diverse learning needs and contexts but also cultivates the intellectual agility, creativity, and ethical discernment essential for navigating an unpredictable future. Adaptive pedagogy equips educators with powerful analytics to enact responsive, evidence-based teaching strategies while empowering learners to become proactive innovators, researchers, and change-makers. As Education 5.0 propels us toward a future where learning is deeply interconnected with technology and humanity, adaptive pedagogy stands as a crucial linchpin illuminating pathways for transformative research and inspiring a new era of scholarly inquiry into how education can evolve to meet and shape the demands of an ever-changing global society. This synthesis of technology and empathy demands rigorous exploration, promising rich insights and profound implications for the next generation of educational policies, practices, and technologies.

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Reconceptualizing the Assistant Principal Role to Leverage its Transformative Potential

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Abstract

Assistant principals (APs) can act as powerful agents for ensuring equitable educational access. Given their close proximity to students' academic and behavioral experiences, they have their fingers on the cultural "pulses" of their schools and are often positioned to influence decisions that significantly impact student trajectories. However, many APs are still underutilized and underdeveloped by principals who hold outdated conceptions of the position, using it mainly as a catch-all for supervisory duties and discipline. When relegated to low-level management roles, and in the absence of appropriate mentoring and training, APs often prematurely quit their positions, disrupting school improvement initiatives, morale, and leader succession. This study explores how a group of early-career APs experienced a unique, year-long Inclusive Excellence fellowship that offered targeted professional development and group support; it also gathered perspectives on how specific supervisory practices impacted their capacity to act transformatively and their willingness to persist in their roles.

Keywords: Transformative principal, assistant principal, school culture

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Introduction

Transformative principals prioritize social justice at the core of their work, assembling equity-focused leadership teams that work collaboratively to ensure rigorous and nurturing learning environments for every student (Nganga et al., 2025; Radd et al., 2021). They realize that this work is complex and requires the diverse perspectives and skills of various individuals leading the work at different layers of the school structure (Goldring et al., 2021; Wallace Foundation, 2021a). One strategy they use to maximize their capacity is to grow and leverage the transformative potential of their assistant principals (APs). By supporting and engaging their APs as social justice leaders on the front lines of instruction and school culture, these principals activate a critical catalyst for change (Goldring et al., 2021).

The Underutilization of Assistant Principals

Despite a steady increase in these positions, especially in urban and low-income schools, the assistant principals' potential to advance equity for underserved student populations often goes untapped (Armstrong, 2010; Goldring et al., 2021; Wallace Foundation, 2021b). Instead, many APs continue to be assigned a preponderance of disciplinary and supervisory duties by their principals that afford them little agency or opportunity to exercise or develop their leadership capacity. Furthermore, APs are often overlooked in regard to their needs for targeted professional development and coaching that can support their effectiveness in eliminating opportunity gaps (Armstrong, 2010, 2015; Bierly & Shy, 2013; Goldring et al., 2021; Houchens et al., 2018; Ishimaru, 2013).

The Lack of Clarity Around Expectations for APs

Unlike the principal role, expectations of APs can differ widely from school to school, even within districts. A combination of factors accounts for such variation: Disagreements exist in the field as to whether the position should be treated as a principal training ground, a unique leadership role, or both; in fact, current leadership standards and evaluation tools do not differentiate between principal and AP leadership roles despite their distinct differences (Bartanen et al., 2020; Bouffard, 2023; Goldring et al., 2021; Wallace Foundation, 2021a, 2021b). Additionally, though most principals will spend time serving as APs prior to advancing as building leaders, leader preparation programs often do not explore the role's possibilities, including how its unique mid-level positioning in the school structure places it in direct proximity to many of the frontline decisions that impact educational access for students (Armstrong, 2010; Goldring et al., 2021).

The Impact of Poor AP Utilization on School Improvement Efforts

One serious consequence of not providing APs with the challenges, supports, and validation needed to develop their transformative leadership capacity and commitment is their relatively high turnover rate: approximately one-quarter of APs resign from their roles within just a few years, while more than half choose to leave their buildings; approximately 10% of these APs quit building leadership altogether (Bartanen et al., 2020). Frequent AP turnover can be highly disruptive to school improvement initiatives, reducing faculty morale and buy-in for critical changes in practice when constant interruptions and the fracturing of relationships create confusion and anxiety for staff, students, and families (Bierly & Shy, 2013; Wallace Foundation, 2021a). Furthermore, just as the presence of APs has been found to prevent burnout in principals

and faculty, their abrupt departure often causes stress for the remaining administrative team members who must assume greater responsibility while replacements are hired and trained (Goldring et al., 2021). Time and money spent on continually recruiting APs also wastes human and financial resources that could be better spent on school improvement efforts (Levin & Bradley, 2019). Finally, when the role is viewed as tedious, low-impact, and low-prestige, faculty may be deterred from becoming APs. Given the increasing vacancies of principals and other administrator positions due to retirement and burnout, it is critical that the AP role be sustainably designed in order to ensure that buildings have available to them a highly trained and committed pool of mid-level leaders ready to assume these vacancies (Goldring et al., 2021).

Giving Consideration to Generational Differences in How APs Might Perceive Their Roles

Changing expectations of Millennial and Generation X APs around their work experiences and conditions may also influence their satisfaction with and persistence in their roles. For example, as employees, they may be less willing than their Boomer predecessors to tolerate autocratic behaviors and traditions of practice that prevent them from solving problems logically and responsively, or to remain in jobs that are overloaded with tedious, managerial tasks that fail to lead to more immediate growth opportunities (Purdue Global, n.d.). They tend to be more comfortable working in more informal, collaborative environments and place a high value on protecting their time outside of work hours (Purdue Global, n.d.). These generational differences may impact how these APs view role expectations, communications, and the kinds of support they expect from the principals and districts.

The Purpose of This Article

Despite the growing numbers of AP positions and our increasing acknowledgment of their potential contributions to school improvement, relatively little research exists around the best ways to utilize, prepare, and retain them (Bartanen et al., 2020; Goldring et al., 2021). This study offers firsthand perspectives from four early-career APs, employed for fewer than two years at several K-12 public schools in the Northeastern U.S., who participated in a year-long AP Inclusive Excellence Fellowship. Facilitated by the researcher, a former AP/house principal, the fellowship was designed to support participants' self-efficacy as transformative mid-level leaders and to explore their needs and experiences as relatively new practitioners. The testimonies gathered from these APs illustrate how they can and often do promote equitable practices in their day-to-day encounters with faculty, students, and families despite the challenges and compromises that can arise when "leading from the middle". Perhaps most significantly, participants reveal critical perspectives around how specific principal attitudes and practices impacted their self-efficacy and job satisfaction. The author presents this information in the context of the most recent literature around common experiences, needs, and retention issues of APs.

Study Methodology

The Inclusive Excellence fellowship, which met bimonthly over the 2024-2025 school year, was part of an IRB-approved qualitative study on APs' experiences and needs as transformative leaders. Participants were recruited through convenience sampling: emails were sent to local superintendents and principals inviting them to recommend APs for participation. While seven APs initially expressed interest, the time commitment and driving distance to the meeting site ultimately resulted in participation by four individuals; over time, the group elected

to meet online for their convenience. Fellows included a first-year elementary AP working in an urban district, a second-year middle school AP employed in a suburban district, a second-year AP working in a K-8 suburban school, and a second-year AP serving in an urban high school. An equal number of males and females were represented; two participants identified as educators of color and one fellow identified as a member of the LGBTQ+ community.

The five 1½- hour fellowship sessions featured a variety of content, discussions, and activities around the AP role, exploring such topics as enacting transformative practices within their spheres of control and influence, intervening to support behaviorally challenged and chronically absent students, and having difficult conversations. Guest speakers were invited to support reframing and understanding of root causes of attendance and behavioral challenges and share evidence-based practices for re-engaging struggling students and families. Participants dialogued around their successes, challenges, and the support they received, and how these experiences impacted their self-efficacy in their roles. Pre- and post-program interviews were conducted; member checks ensured accuracy of quotes. To further protect the anonymity of the fellows and their districts, the author has used gender-neutral language in all participant references and quotes. All fellows consented to the use of their data in publications and presentations; there were no competing interests to declare.

Theoretical Influences

The fellowship model was chosen with the intention of reducing isolation of new APs and to offer targeted professional development in a continuous and collaborative setting to further participants' preparation and self-efficacy as transformative change agents. Several theories informed the research design and fellowship curriculum.

Transformative Leadership Theories

The content of the meetings was designed to support participants' capacity to act transformatively in their roles as APs. Transformative leadership is grounded in a commitment to social justice and democracy, viewing education as having both an individual and a societal impact (Shields & Hesbol, 2020; Theoharis, 2007). It acknowledges the historical inequities in practice which have benefited Anglo, middle- to upper-class populations and which have resulted in the persistent opportunity gaps and disparate educational outcomes we see today (Ladson-Billings, 2021). In pursuing inclusive learning environments, transformative leaders not only address pedagogy, but also the deficit mindsets and sorting practices that often underlie the low rigor, segregated learning experiences provided to many minoritized populations. They strive to ensure validating, inclusive school cultures and pedagogies that engage every learner in rigorous learning opportunities (Ladson-Billings, 2021; Vygotsky, 1978). Additionally, transformative leaders take a collaborative approach to problem-solving, engaging historically marginalized voices in creating policies, systems, and curricula that address the needs of the students and families they serve. They strive to develop ethical citizens by engaging students socio-politically in exploring issues of social justice that lie in their spheres of influence (Ladson-Billings, 2021).

Adult Learning Theories

The fellowship approach reflects several principles of Adult Learning Theory, including the idea that adults learn best when content is immediately applicable to relevant problems, and when learners are provided opportunities to "sense-make" with others about new concepts and

experiences (Mezirow, 1981; Freire, 1970). Consequently, every meeting included the processing of real-life scenarios and personal challenges; in one session, a guest administrator facilitated several behavioral case studies while another session featured a guest professional who discussed a state attendance program.

This theory also maintains that, as mature mindsets can be challenging to alter, they often require "disruptive" experiences in order to successfully challenge entrenched beliefs. To encourage the fellows to consider the potential influence of implicit bias on judgments around learning potential and behavior, as well as the effects of cultural mismatches on educator-student relationships, they engaged in self-reflection around how their own lived experiences impact their priorities and relationships with some students and families.

Self-Determination Theory

Self-Determination Theory (Deci & Ryan, 2012) suggests that people feel motivated to persist with tasks when three fundamental psychological needs are met: a sense of competence, relatedness, and autonomy. *Competence* refers to one's sense of mastery of a task and one's ability to increase one's effectiveness over time (Ryan & Deci, 2013). APs who are given assignments that are challenging, validating of their positions, and which afford them opportunities to engage in a variety of school improvement roles may be more likely to persist at their jobs. Additionally, when empowered and trusted by their principals as thought partners and decision-makers, they gain a critical sense of competency and confidence. *Relatedne*ss refers to the experience of social connectedness, including the perception that one is cared for and esteemed by others. As APs are typically supervised by principals, the mentoring and coaching they receive plays a large role in the level of professional and personal connection they feel. They often benefit from being provided opportunities to engage with the school community in ways that allow them to create key relationships and develop their leadership credibility, such as when assigned to serve on parent committees, advise student organizations, and represent the school at community events. *Autonomy* deals with the degree of perceived agency over one's life. APs want their roles to consider their career goals and strengths, and to allow them to exercise some judgment. The fellows explored their sense of autonomy in their current positions, examining their spheres of influence, control, and care, and shared strategies they used for leveraging their interests in their roles.

Exploring the Literature

APs on the Front Line of Improving Educational Access

Traditionally, the AP role has often been limited to addressing behavior, attendance, and providing building supervision; in fact, the entertainment industry has sometimes comically stereotyped APs as frustrated, inept individuals who often act as student adversaries rather than advocates. As such, the AP role can sometimes be perceived negatively by students, families, and staff. However, the position is increasingly being recognized by transformative-minded principals for its potential to advocate for underserved students by removing academic and relational challenges that act as barriers. APs are increasingly being assigned to lead intervention teams, facilitate PPTs, coach instruction, and arrange professional development, responsibilities that require effective communication and trust-building with members of the school community. From these unique vantage points, they can not only observe first-hand how students experience

the academic and cultural practices of their schools - including the degree to which they feel a sense of challenge, purpose, and belonging in their learning environments - but can use their positional authority to support the use of evidence-based, inclusive approaches (Houchens et al., 2018).

APs can contribute to eliminating opportunity gaps in both direct and indirect ways. Indirectly, they may influence decision-making by their administrative teams by sharing their observations of how aspects of culture and climate, pedagogy, and even policies may be negatively impacting the academic and social advancement of traditionally underserved student populations (Donlan, 2022). For example, as they work with chronically absent students and their families, they may uncover routine transportation or attendance practices that disproportionately disadvantage first-generation students or single-parent families (Author, 2022). While observing instruction, they may notice a need for faculty training in differentiation or relational strategies that can more effectively engage struggling students and help to dismantle disproportionately negative academic or disciplinary outcomes for certain populations.

APs can also directly impact school culture and climate through their acceptance or rejection of deficit narratives and biased decision-making practices by teams that negatively influence decisions that impact the academic and social trajectories of low-income students, emerging multilingual learners (MLs), students of color, and students with exceptionalities - groups that have been traditionally marginalized by schools (Fergus, 2016; Author, 2020). By modeling high expectations, confronting biased or unproductive attitudes, and holding teams accountable for using protocols and appropriate evidence in making critical decisions, APs can encourage practices that are known to promote equitable access.

Another area that APs often influence is the management and re-engagement of avoidant or behaviorally-challenged students. By sharing research and helping adults to constructively reframe their interpretations of student behaviors, and by serving as advocates of restorative and trauma-informed practices, they can potentially support social-emotional growth and development of students and reduce the use of harmful exclusionary consequences (Radd et al., 2021). Even when APs lack full authority to make final decisions around suspensions or expulsions, the contributions of their perspectives and advocacy can often significantly impact student outcomes (Donlan, 2022; Madhlangobe & Gordon, 2012).

Finally, the frequent communication APs have with families around student attendance, behavior, and other issues offers regular opportunities to create trusting relationships that can ultimately help their schools to better serve them. Through the myriad decisions and dispositions they display daily, APs can increase the chances that their students will have more equitable access to nurturing, rigorous learning environments. Content and activities are best aligned with adult learning theory and include interactive opportunities (Coates et al., 2016)

The Use of Fellowships for Professional Development

The fellowship model has been used to support growth and career advancement in a variety of settings, including the medical professions, science research, and K-12 teacher leadership and development (Coates et al., 2016; NIET, 2025). Fellowships typically involve the creation of voluntary cohorts or communities who meet regularly to engage in shared interests such as receiving professional development and mentoring, conducting research, networking around common issues and needs, and completing projects. Fellows may receive stipends to compensate them for work produced or to offset participation costs (Coates et al., 2016). The fellowship model has been proven to reduce professional isolation, offer greater connectivity,

and provide the opportunity to pursue personal goals, which can potentially result in increased self-confidence, better understanding of systems, increased resiliency, greater assertiveness, improved technical and communication skills, new career advancement opportunities, expanded professional contacts, and increased credibility in one's field (Debevoise, 2020; McKimm et al., 2019; Opportunity Desk, 2024; Robinson, 2024). Barriers to the fellowship model include time constraints of participants, especially when the time is not protected by the employer or academic program, and finding funding for paid fellowships (Coates et al., 2016; Opportunity Desk, 2024).

Findings

All of the study participants identified the desire to support student success as their primary motivation for entering school administration. However, varying levels of leadership opportunity, agency, and support resulted in different levels of self-efficacy and satisfaction with their roles. The fellows discussed a variety of ways that they practiced transformatively despite constraints sometimes placed on their agency:

- They confronted deficit narratives that threatened to prevent individuals and teams from accurately identifying root causes of disparate achievement and improving practice. Every fellow in the study described ways in which, either through coaching instruction, leading improvement teams, or managing interpersonal communications, they modeled empathy, cultural responsiveness, and/or growth mindsets. For example, one AP explained how they modeled and continually redirected a teacher team over a period of a year to stay solution-focused as they deliberated about ways to support a struggling student:

… I am not going to assume that he's been through trauma, but his behavior resembles it…I'm hearing his teachers often say, "Yeah, he just doesn't belong here. This isn't the right setting for him." And I think to myself, "Whether you're right or not - and I don't think you are" (and I don't say it that way to them), I tell them, "The student's not going anywhere. The student is ours to help and support."

- They supported the fair and appropriate use of academic and behavioral data in making instructional decisions. While APs still spend more time managing discipline than do principals, research indicates that their involvement in instructional leadership is increasing (Goldring et al., 2021). One way that two of the fellows leveraged their administrative access was by supporting faculty in obtaining and organizing critical academic and behavioral data. Although many teachers understand the need to collect and monitor data to inform their instructional decisions, they often face challenges accessing it in a timely, practical manner (Radd et al., 2021). In an effort to reduce inappropriate referrals for special education evaluation, one fellow worked to improve the use of data and tiered interventions by their school's intervention team. The AP introduced a decision-making protocol as well as a data collection tool that assembles academic, attendance, and discipline data into an easy-to-read document that allowed team members to explore big-picture patterns and possible correlations. By the time the fellowship ended, the AP reported feeling optimistic that the team was beginning to see a positive impact, "We do not go from Tier I to II unless we have six weeks of data collection that's very targeted, whether it's behavioral, reading or academic…a lot of these steps were skipped and not utilized. So, I think we're now helping."

- They supported the use of culturally relevant, responsive instruction: A first-year AP described how their own lived experiences as a former English Language Learner and a child of refugee parents help them to empathize with emerging MLs and to support their teachers in understanding and responding to their needs, "I did well in school, but there are times I feel like I struggled, especially with reading comprehension…so I think those pieces help me to put myself in the shoes of a student, a teacher, and a parent..." Given the large number of MLs enrolled in their school and the lack of a dedicated specialist, the fellow (a former instructional math coach) chose to offer instructional support to teachers. For example, after discovering that faculty had not received the names of the MLs in their classes, the AP obtained this information for them, then followed up with instructional strategies. They recalled a specific instance in which a teacher attempted to assess a student's vocabulary using a worksheet that contained an ambiguous prompt; the AP helped the teacher to explore and reframe the student's interpretations,

…the student put "hat". And I said, "Well, technically, they're right," and the teacher was like, "No, it's supposed to be a cap." I said, "Well, if you want it to be 'cap,' then give them a word bank and just say, 'here are all the words that you're going to be using to fill out this worksheet. Another fellow of Hispanic identity also worked to build greater accountability for culturally responsive practices,I think my biggest contribution, especially to underrepresented students, is holding teachers accountable during our evaluations… You don't realize that one teacher has so much power and influence over the lives of so many students. And if we're not addressing things that are inappropriate, or things that are not happening, then we're not serving the students academically...

A second-year AP explained how, after spending almost two years transitioning into their role, they now give greater attention to promoting inclusive instruction,
I'm following the process to be able to say, "Hey, have you considered how your students of color feel? How are they represented in their learning? Are they seeing themselves in their learning...are they being held to the same level of rigor and standards as your other students?"

- They worked intentionally to develop supportive relationships with historically underserved populations of students and families, validating their cultural strengths and advocating for their needs. Success in relationship-building can balance out the more stressful aspects of the AP role (Armstrong, 2015); by engaging in brave conversations around bias and inclusion, APs can be more effective in developing trusting relationships, especially with historically underserved faculty, students, and families (Armstrong, 2010; Craft et al., 2016; Donlan, 2022; Verduzco-Baker, 2018). Three of the study participants described how recalling their own marginalizing experiences as students has helped them to connect with groups of students and families who are struggling to be seen and understood. One Anglo AP explains how their experiences as a member of the LGBTQ+ community help them to empathize with challenges of belonging and inclusion, "… I kind of understand what it is to be somebody who wants to be understood. I still have a lot of privilege, but there have been some disadvantages I had to overcome…" This individual described how their heightened sensitivity has sometimes served as an asset in managing racial conflicts that have arisen in their school:

I had a conversation with a parent who is African American last year who was talking about her concerns about the different treatment of students of color in our building. And she said, "…you

just get it. Like, you do understand it, and we appreciate that… I don't know if it's because of your own circumstances… you have a receptiveness"…I think that it's my empathy and my life experiences…You know, we all walk in with different baggage, and therefore we all have different needs.

This AP also discussed another incident in which they bridged communication with a parent of color who claimed her daughter had been treated differently from other students, …They [the principal and parent] got to a point where they really weren't able to see eye-to-eye on anything. So, I said, "Look, I'll reach out." I don't think I made her feel like all the problems were solved, but I helped her feel heard... And I told her I would do what's in my power to help address that…not in a way like, "Oh, my principal is not doing it that way" but just, "listen, I hear your concerns, and I understand, and I want to see what we can do to improve the situation".

Two fellows reported using their multilingual assets to support non-English-speaking parents in deciphering school policies, procedures, norms, and traditions. One of them explained how they often bridge communication with their largely Spanish-speaking high school families by personally interpreting at meetings rather than hiring translators, "When I'm in these meetings, the families feel a relief when they see me. And they're like, 'You speak Spanish'! So, not needing a translator to be present is very helpful." Another fellow, who was a former student in the district they now work in, recalled how their own parents' language barriers led them to avoid school events out of self-consciousness and lack of understanding, "…my parents didn't go to any of those things unless we told them we had to go...They would take us, but they would just be, like, 'okay, we'll sit in the car. You go do what you need to do'". After experiencing a small turnout of Spanish-speaking parents for an important school choice informational event, the AP approached the organizer of the event and asked if the invitation to families had been translated into Spanish. The individual responded that they hadn't and that the AP was the first person to bring the idea up. The AP responded, "…for next year, we can get somebody to translate it because a lot of families don't know about it.

- They support faculty in enhancing their communication and relationship-building skills by modeling and facilitating constructive practices with students and families. One fellow, a former school counselor, has been effective in facilitating understanding between faculty and underrepresented families and helping them to reach solutions,
- …there are always situations where parents will be like, "my child is not getting what they need." And I see the teachers feeling like, "We're doing everything possible we can for your child." And I have the opportunity to come in and just kind of facilitate and mediate there, and say, "Hey, look, you know I'm hearing this from you, the parent. And I'm hearing this from you, the teacher or the service provider…it sounds like on both sides everyone wants this child to succeed, so how do we make that come together?"
- They shared strategies for supporting the social-emotional growth of students and modeled trauma-informed practices. APs who are trained in trauma-informed relational practices can support others in seeing beyond student behaviors to understand their root causes and develop responsive solutions (Donlan, 2022). Their level of understanding and ability to address miscommunication, cultural conflicts, and relational practices that lie at the roots of disproportionate discipline of students of color, lower-income students, and students with exceptionalities, as well as their ability to choose restorative

approaches versus exclusionary discipline, can help to close opportunity gaps (Darling-Hammond, 2023). One fellow who serves as an AP of a largely low-income, racially diverse school leverages the discretion given to them by their principal around discipline to use restorative approaches that focus on social-emotional teaching and relationship-building. This individual recalled an instance in which a minor physical altercation in their school occurred after one student accidentally brushed up against another student on the playground, "…both girls were sent to my office. I had them write out why they were sent to my office, which I learned is a great strategy…" After finding them both receptive to reflecting on their choices, the AP decreased their suspension time to prevent further missed instruction. The AP also privately followed up with the student who reacted so intensely to having her hair touched,

- …she just stood there for like two or three minutes and then just started crying. Clearly there was something else. And so I was, like, "I'll let you know something. From my experience, you react that way when somebody's done something to you physically"... So, then she just let it all out…her mom's ex-boyfriend would beat her…yanking her hair, and then hit her.

The AP connected the student to the school's counseling services and talked with her about better communication strategies. "That was a few weeks ago, but now, every time she comes in the hallway, she sees me and feels comfortable and safe. Today, she asked if she could have lunch with me." The same AP also reported supporting faculty in reframing their interpretations of certain behaviors, encouraging them to look beyond them to ask, "…this is what we saw, but behind that, there is this piece, and we just need to be compassionate and also understanding… how can we support her?"

Barriers to the Practice and Motivation of APs

Despite the transformative potential of the role, the agency that APs are actually afforded is largely determined by the attitudes and leadership practices of their principals, including their willingness to position their APs as critical team players in leading school improvement efforts (Bartanen et al., 2021). Research identifies several common barriers to the transformative capacity of APs which are often rooted in principal practices, including an unwillingness to distribute leadership roles and a lack of understanding of the pedagogical and cultural conditions needed to create equitable educational access (Bierly & Shy, 2013; Buff, 2017; Wallace Foundation, 2021b). Below are the perspectives and experiences of the fellows around these barriers as well as connections to the related research:

Lack of Agency and Dead-End Assignments

Outdated notions of the AP role, coupled with a more autocratic style by principals, can prevent the assignment of meaningful responsibilities to APs that build their skills and credibility with the school community (Goldring as reported by Gill, 2018; Matthews & Crow, 2003; Wallace Foundation, 2021b). In fact, a significant number of APs fail to be promoted to the principalship due to insufficient leadership experience (Buff, 2017; Pollock et al., 2017; Somoza-Norton & Neumann, 2021). As mentioned previously, APs often quit jobs that are filled with a preponderance of managerial duties that prevent them from applying their training to advancing school improvement efforts and which do not help them to improve their leadership skills (Anderson & Turnbull, 2019; Armstrong, 2010, 2015; Barnett et al., 2012; Craft et al., 2016). One AP shared,

…sometimes being an assistant principal can feel very powerless because I can only do so much. I get along wonderfully with my principal…but there's a level of, like, almost linear vision in certain areas…I feel like right now I'm in the phase where I have all this knowledge and have some practical application. But I really need to know, and really need to grow, my ability to kind of make it happen… I struggle with, "All right, now what?"

APs can also be hampered by district decisions that fail to support building-based goals and unique site challenges, including the needs of various minoritized populations (Buff, 2017; Carpenter et al., 2017). One fellow explained how vacillation by their district around school start times diverted a significant amount of their time from supporting faculty in the stressful weeks before the opening of the school year, "…I literally spent my first three weeks before school creating a schedule for all the teachers and entering it into (Name of Database)…that took a lot of time." After completing a schedule to accommodate staffing reductions, and with only two weeks before school was scheduled to open, the AP was notified that the district's proposed plan had been revoked: "My principal decided we would go back to our times from last year. However, I couldn't just go back to last year's schedule because I wasn't going to be given my full staff… I still had to work on the schedule regardless…" Then, the day before the final schedule was due, the AP received a third directive that the building would be getting all of their former staff back, necessitating yet another schedule revision. Another fellow experienced a barrier to instructional coaching when their central office switched to a new reading program mid-year but failed to communicate the decision or provide administrative access to the curriculum.

Some APs experience anxiety when faced with ethical dilemmas caused by mandates to enforce rigid or outdated policies that are known to exacerbate disparities, especially when managing attendance or discipline issues (Anderson & Turnbull, 2019; Armstrong, 2010, 2015; Buff, 2017; Carpenter et al., 2017; Shields & Hesbol, 2020). One fellow shared that their district's emphasis on uniformity over equity has sometimes prevented them from being appropriately responsive to individual circumstances,There's a lot of pushback, especially with a district as big as [Name of District]; we always need to ensure that all of the schools are on the same page and doing the same thing because if one family comes from one school and decides to move over here, but we're doing things differently, then there's a lot of conflict.

This AP added that it can be painful to experience criticism from faculty and families for enforcing certain district mandates: "…Sometimes when it comes to these policies, we don't have much power over any of that. A lot of teachers feel that we are the ones making these decisions, and the parents feel that it's us, but it's not the administrators at all..."

Unsustainable Working Conditions

In many districts, vague contractual terminology and the lack of administrator unions offer no standards or protections around APs' work conditions; many new hires feel overwhelmed when immediately assigned a full array of responsibilities without a reasonable adjustment period and appropriate supports (Armstrong, 2010, 2014, 2015; Barnett et al., 2012). A common reason that APs resign is poor work-life balance, including inattention by their supervisors to even their most basic needs such as time to eat lunch and to utilize sick days (Armstrong, 2015; Carpenter et al., 2017; Pollock et al., 2017). Though shortsighted, some districts defend these oppressive practices as "rites of passage" along the path to promotion (Armstrong, 2010; Houchens, 2012). In fact, prolonged exposure by APs to stressful working

conditions can negatively impact their morale and their health, potentially reducing their productivity and longevity in their roles (Armstrong, 2010, 2014, 2015).

Lack of Targeted Professional Learning Opportunities

Most APs want and need targeted professional development (PD) around such responsibilities as coaching instruction, leading special education and 504 meetings, managing conflict, engaging families, and addressing mental health concerns (Armstrong, 2010; Barnett et al., 2012, Barnett et al., 2017; Craft et al., 2016; Goldring et al., 2021; Pollock et al., 2017). While several of the fellows reported receiving some continuing education from their districts, such as training in instructional rounds and facilitating standardized testing, it was often optional and had to be sought out. In some districts, APs may be discouraged from leaving their buildings to attend conferences or professional gatherings (Oliver, 2005). While the study participants were initially given permission to attend the fellowship's late afternoon meetings, most fellows missed at least one meeting due to pressure to be on-call in their buildings.

Insufficient Coaching and Mentoring

The social transition from faculty member to building administrator can be a challenge for some newly appointed APs, especially when they encounter criticism, resistance, or rejection from former faculty colleagues (Armstrong, 2010, 2015; Barnett et al., 2012; Craft et al., 2016). One fellow shared how overwhelming it was to begin an AP position in a new school, "nothing prepares you for that…people are coming to you with questions, and I'm, like, 'I don't even know where the *bathroom* is!'" Principals and administrative colleagues need to offer newer APs empathy and reassurance as well as strategies for developing the "thicker skin" required to successfully make their career transitions (Armstrong, 2010, p. 708; Armstrong, 2015). Without such support, APs can feel professionally isolated and less confident in their roles. While three of the four APs met regularly with their principals, one fellow expressed disappointment at their principal's unwillingness to schedule regular meetings with them when they first assumed their AP role, leaving them to figure many things out independently,

… I had asked if we could have weekly meetings, because that's what I saw at my old school. However, [the principal] wasn't too fond of the idea. So, for now, I just kind of approach [the principal] with things I may have noticed…

Unsupportive or Unethical Behavior by Principals and District-level Administrators

A common reason for employee turnover is a lack of trust in and respect for their supervisors (Parker & Horowitz, 2022). APs are no exception, often leaving jobs due to unsupportive, temperamental, or inflexible principals who overturned their decisions or openly criticized them to placate parents, faculty, or board members (Armstrong, 2010; Buff, 2017; Ishimaru, 2013). Such behaviors not only undermine relationships between principals and APs but may also negatively impact how the school community perceives the credibility of the AP role (Armstrong, 2010; Cohen & Schecter, 2019. Additionally, equity-minded APs can find it challenging to work for principals who confuse equity with equality, making it difficult for them to be responsive to the exceptional needs of underserved populations (Armstrong, 2010). While none of the fellows in the study reported having contentious principal relationships, each experienced different levels of alignment with their principals' values and goals.

How APs Define Principal Support

Despite the significant numbers of APs who experience dissatisfaction with their positions, many APs work for building and district leaders who intentionally create professional and relational conditions that support their self-efficacy and retention (Goldring et al., 2021). The four fellows in this study identified the following positive supervisory practices as not only critical to their growth and self-efficacy, but influential to their decisions to continue in their roles. These practices align with the literature on building the capacity of APs and ensuring successful leader succession:

Their principals modeled and engaged in practices that align with a mission of equitable access. A culture of inclusive excellence begins at the top with principals (and central office administrators) who demonstrate behaviors that support equitable practice, such as a willingness to engage in brave conversations when leading critical changes (Bierly & Shy, 2013; Mitchell, 2025; Author, 2020, 2023; Radd et al., 2021; Shields & Hesbol, 2020; Verduzco-Baker, 2018). One fellow shared that their principal's clear messaging and modeling have helped them to facilitate an inclusive approach to leading their climate committee in identifying the school's core values: "I'm getting the staff to take the lead, and I'm facilitating it in regard to defining what it means to be a (school mascot)…we will have a very clear identity, and then, from there, we will identify what we value."

Their principals gave increasing discretion to them over decision-making. APs need to feel empowered and confident about making the dozens of daily, on-the-spot decisions that impact pedagogical quality, school culture, and student/parent engagement (Buff, 2017); when principals resist the urge to micromanage, they allow their APs critical opportunities and space to take calculated risks that can develop their skills, confidence, and credibility (Anderson & Turnbull, 2019; Banerji, 2025). One fellow attributed their growing self-efficacy around leading school improvement efforts to the unwavering trust their principal has shown them, "…I almost feel like an equal with [the principal] when we work. I don't view myself - and [the principal] doesn't view *me* - as an assistant. We are truly a team." The AP recalled an instance in which they felt particularly validated by their principal's enthusiasm over a book that they shared about a new math approach, "… [The principal] read it, and was like 'Oh, we have to do this!'" Additionally, the principal supported the AP's suggestion of leading an all-faculty book read: **"**We agreed on the topic of grading and selected the book by Joe Feldman called *Grading for Equity*. So, I am running that PD and put a small committee together." The AP then led the committee in a collaborative process for planning faculty training to help them create protocols and grading criteria aligned with the school's newly established commitments: "I feel like I'm building capacity with that smaller team and building their leadership...I'm able to help the whole staff go on this learning journey this year with me."

Their principals conveyed honesty, caring, and a growth mindset. As new leader practitioners, the fellows wanted both honest feedback and the ability to make novice mistakes without fear of being judged harshly (Armstrong, 2015; Barnett et al., 2017). They emphasized the importance of knowing that their principals "had their backs" at challenging moments. One AP who experienced a particularly challenging teacher supervisory situation that led to significant union involvement described the importance of their principal's support and guidance through each step of the process. After one particularly difficult legal meeting, the fellow was

shocked and grateful when the principal unexpectedly showed up at their home to check on them: “I don’t think I could have gotten through it without [the principal]’s support.”

Their principals acted as mentors and coaches. While most APs need and want intentional coaching and mentoring to develop their leadership capacity and their resilience, especially when managing complex interactions with parents, faculty, and students, new hires in particular need safe spaces in which to talk through current issues and challenges (Armstrong, 2010; Barnett et al., 2017; Cohen & Schecter, 2019; Craft et al., 2016). One fellow confessed, “I feel like I'm at that stage of the learning cycle where I don't even know what I don't know. I'm aware of that, and I do want help.” APs also need reassurance from their principals. When one fellow was advised by a colleague to trust themself more, they were relieved when the principal agreed and said, “You’re doing *fine*. Trust that.”

Many APs benefit from scenario-based coaching on ways to manage difficult conversations (Craft et al., 2016; Hayes & Burkett, 2021). Younger APs, for example, can be challenged by veteran teachers who resist their supervision and test their authority by going over their heads with questions and concerns (Armstrong, 2010; Barnett et al., 2017). One fellow who has worked with their principal to strategize around developing buy-in from seasoned teachers for revising outdated practices has learned to reframe the process as “evolving, not changing.” It's a blessing and a curse, but we have the oldest, most veteran staff in the whole district; most of our teachers have 20+ years of experience. It's a gift when it comes to class management - they have things down. However, when we're asking them to explore grading, and we've graded the same way since I student-taught… you hear the grumblings.
Despite the need for this support, the AP feels confident in their principal’s trust in them: “I do feel that I have the power, but I’m still very new to all of this...”

Their Principals Supported Critical Reflection. Principals and other mentors who model and cultivate the habit of self-reflection with their APs can help them to clarify their ethical commitments and develop their transformative leadership platforms (Barnett et al., 2017; Kafele, 2023; Khalifa et al., 2016). For example, all school leaders need to reflect on how their lived experiences may serve as assets or deterrents to their capacity to understand and respond to the needs of others (Barnett et al., 2017; Gooden & O’Doherty, 2015; Khalifa et al., 2016; Ladson-Billings, 2021). One fellow, for example, sometimes struggles to connect with the community’s wealthier families,We have big chunks of students that I have a hard time relating to because they are uber- wealthy… I have no idea what it's like to be in a family with seven different houses around the country… but, you know, sometimes those children from wealthy families have attendance and discipline issues. They can have neglect, too. It just looks different. Additionally, APs benefit from exploring common tensions that arise while working transformatively, such as the challenge of changing a system from within; they may also benefit from learning strategies for depersonalizing and managing resistance to change (Author, 2023).

Their Principals Provided Well-Rounded Professional Leadership Opportunities. APs often need guidance in selecting professional experiences that will not only improve their practices but support their career goals. Three of the fellows stated that their principals took intentional steps to model skills like facilitating school improvement teams, then turned these responsibilities over to them. A second-year AP expressed enthusiasm at being entrusted with the job of building the following year’s elementary school schedule, which requires making some key programmatic

decisions: "[The principal] has given me a lot of ownership over building next year's schedule, yet I feel comfortable enough to ask questions and problem-solve." Another participant was encouraged to create and lead faculty PD: "I led an entire PD series through our staff meeting around relationships and putting relationships at the focus of climate and culture…" Research indicates that APs benefit from being encouraged to gain new perspectives and resources by attending networking events and conferences and by serving on professional committees within and outside of their districts (Barnett et al., 2017; Hayes & Burkett, 2021). One AP described how participating in fellowship helped them to develop the courage to provide more honest, direct feedback to faculty, "I don't know if it was a direct strategy I heard from the group, but being empowered to take that head on…I wanted to 'up' my game…"

Their Principals Built High-Functioning Leadership Teams. High-functioning leadership teams can support the self-efficacy of APs by helping them to learn day-to-day procedures, anticipate upcoming responsibilities, and consider the cultures and traditions of their buildings in their decision-making (Armstrong, 2015; Buff, 2017; Craft et al., 2016; Goodman & Berry, 2013; Hayes & Burkett, 2021; Pollock et al., 2017). One fellow appreciated the time their principal takes to plan fun, authentic team-building activities for the leadership team. Another AP described the value of having department heads in attendance at weekly administrative meetings, "…they're great about trying to figure out solutions for our kids that are struggling or underrepresented." A third participant noted the benefits of having a second, experienced AP on the leadership team to whom they can turn for advice.

Implications/Discussion

Given the growing complexity of the needs of today's student populations, and the relatively high AP turnover rate, the need for intentionality by principals around developing skilled, committed, equity-minded midlevel leaders is more urgent than ever. Aside from providing targeted professional development to the participants, an important goal of this study was to gather critical perspectives from early-career APs that could offer principals and districts first-hand perspectives on how to leverage APs as transformative change agents while supporting their self-efficacy and retention. A third objective was to explore the capacity of a fellowship model to meet the professional development needs of this growing population of school leaders.

The Importance of Providing Agency to APs

One major finding of the study is that the self-efficacy of APs is largely impacted by the degree of responsibility, agency, and support given to them by their principals. APs are less likely to feel fulfilled or to develop self-efficacy in jobs supervised by principals who provide minimal opportunities to engage in a variety of planning and problem-solving activities around school improvement and who fail to afford any autonomy over their time or decision-making. While it may benefit a principal's schedule to hand off all of the discipline or supervisory duties to their AP, or seem organizationally efficient, such constraints can prevent the AP from engaging in leadership experiences that build skills and support their promotion to higher-level positions. While the fellows in this study spent significant amounts of time addressing behavior challenges, they were also provided time to lead improvement teams, provide instructional supervision, and engage in problem-solving with their principals and with students and families. They appreciated opportunities that leveraged their interests, background knowledge, and linguistic strengths. Fellows also valued the encouragement of their principals to take on higher-

visibility responsibilities such as leading professional development and building schedules, which allowed them to build their credibility with faculty, students, and families; such opportunities helped to balance out the more stressful aspects of their jobs, allowing others to experience their strengths and the positive impact they had on various aspects of school culture, operations, and pedagogy.

The Importance of Coaching and Mentoring

Another important finding is that APs need mentoring, coaching, and reassurance from their principals and other senior leaders. The three fellows who regularly spent time talking through challenges and engaging in planning with their principals viewed these opportunities as highly important to developing their confidence and sense of connection. The fellows who expressed the most positive feelings about their jobs worked for principals who treated them as partners, engaging them in planning and problem-solving. However, the one fellow whose principal took a more laissez-faire approach was able to find enough satisfaction and validation from classroom coaching, relationship-building with students, and the freedom to make some decisions independently to remain in the position. The fellows also expressed the need for encouragement and support from their principals at difficult moments, particularly when dealing with faculty supervision. Despite acknowledging some drawbacks to their roles, each fellow elected to continue in their AP position the following year. Though one participant's position was eliminated by their district, they continue to apply for AP positions as they open up and have been assigned many AP-like responsibilities by their current principal.

The Need for Districtwide Coherence and Support

While this study largely concentrated on AP roles in their buildings, two fellows discussed how a lack of coherence throughout the district sometimes interfered with their ability to practice inclusively and responsively; one fellow claimed that district constraints sometimes negatively impacted their credibility with the school community. Consequently, district leaders need to be mindful of how district policies and decisions align with building goals and needs and ensure that they reflect the evidence around supporting greater inclusion and re-engagement of students who struggle academically or behaviorally; this can be accomplished by engaging principals and APs on policy development teams to explore their perspectives on how proposed policies might play out in day-to-day practice (Anderson & Turnbull, 2019; Armstrong, 2010Barnett et al., 2017; Booker-Dwyer et al., 2023; Doleh, 2024; Khalifa et al., 2016; Mitchell 2025; Pollock et al., 2017; Oliver, 2005; Radd et al., 2021; Yan, 2020). District leaders can also support AP retention by engaging principals in critical discourse around distributive leadership, coaching, and mentoring, and by providing APs targeted professional learning opportunities that can grow their skills and self-efficacy.

Benefits and Barriers to the Fellowship Design

This study explored the value of the fellowship design from both practical and social-emotional perspectives. All of the APs reported benefits from having ongoing group opportunities to process issues and to gain practical ideas; one fellow reported feeling greater appreciation for the supports they receive from their principal after hearing less positive experiences from some fellowship members. Another AP reported gaining greater courage to take more risks when giving faculty feedback after hearing how other APs engaged in brave conversations. One participant took back to their principal a data collection tool shared by

another fellow. All of the fellows reported that the guest speakers offered information that was practical and useful to their roles. However, a considerable barrier was time, which is consistent with the research on the challenges of the model (Coates et al., 2016). While the fellowship was intentionally scheduled in the late afternoon so as not to interfere with the school day, participants indicated that it might have been easier for them to attend meetings scheduled during school hours given the challenges of after-school building coverage and competing personal commitments. Some meetings were attended by only one or two participants; the mean attendance for the five-meeting series was 3.5 sessions. However, while one participant expressed a preference for meetings attended by the larger group, others found benefits in meeting with just one or two peers as well.

Future Research

Retention of Administrators of Color

A relevant concern that this study did not address is the experiences of APs of Color, including their needs for development, support, and retention. APs of color tend to serve for disproportionately longer periods of time in their positions before being promoted, receive less mentoring, and are tapped to be principals at lower rates than Anglo APs, often due to implicit bias (Alcade, 2024; Chism & Childs, 2023; Gill, 2018; Bouffard, 2023; Goldring et al., 2021). In general, administrators of color quit their positions at higher rates, frequently citing toxic work cultures in which they experienced hostility, constant challenges to their credibility, and microaggressions (Alcade, 2024; Armstrong, 2014; Bartenan et al., 2000; Raskin et al., 2021).

Gender Discrimination

Gender differences in AP experiences were also not studied. Female APs, for example, are less likely than their male counterparts to be promoted to high school principalships, which can reduce their chances of advancing to district leadership positions (Bailes & Guthry, 2020; Gill, 2018). Similarly, male administrators of color are often assigned to discipline or DEI roles rather than to academic leadership positions, which can prevent them from developing the broader knowledge and credibility needed to progress in their careers (Peters, 2024; Scott, 2016).

Limitations of the Study

A potential limitation of the study is the possibility that participants were self-selecting; the goals of the inclusive excellence fellowship may have attracted a group of participants who were already committed to ethical, social justice-oriented leadership. As such, their appreciation for the opportunity to improve their transformative practices may not represent the views and priorities of APs as a group. Also, as all four participants were formerly acquainted with the researcher, either through past graduate courses or employment experiences, their commentary may have been influenced by these prior relationships.

Conclusion

When situated in schools that intentionally develop their transformative leadership capacity and support their self-efficacy, APs have the potential to make a significant impact on equitable educational access. However, it is critical that principals and district leaders understand that the degree to which APs can and do act transformatively - and their willingness to persist in their roles - is largely a function of how they are positioned, coached, and supported by their

supervisors and colleagues. As entry-level administrators, APs often face steep learning curves and, consequently, require support, validation, and continual skill development. In addition to receiving support at their worksites, participation in fellowships is an effective way to reduce isolation and provide critical role-specific professional development, informal mentoring, and networking that can enhance their confidence and commitment. By recognizing the capacity of APs to serve as leaders in their own right - and by being intentional about providing them appropriate training, mentoring, and validation - schools not only increase opportunity for their current students, but guarantee to future generations their right to be served by leaders who are capable of and committed to the work of advancing equitable educational access.

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Converging Compassion Science with Prosocial Education: A Collaborative Model for Early Childhood

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Abstract

Compassion science is a compelling field of study from which a new paradigm for promoting prosocial and resilient behavior in young children is emerging. Although several health and human service institutions have integrated compassion science into their policies and practices, these benefits have yet to be widely adopted in early childhood education. Given the prevalence and detrimental effects that societal violence, domestic abuse, neglect, and social injustice have on children and adults alike, a robust model for converging compassion science with prosocial early childhood education is warranted. This article proposes a collaborative framework for promoting the science of compassion within the context of prosocial education and describes an instructional paradigm for enhancing social relationships by proliferating compassionate behaviors amongst stakeholders.

Keywords: Compassion Science, Compassion in Early Childhood, Compassion and Prosocial Education, Compassion and Social-Emotional Learning, Compassion Science and Stakeholders

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Stakeholders in early childhood education have long held a collective awareness of the profound impact early social interactions and relationships have on children's cognitive, social, and emotional development (Bronfenbrenner, 1979; Brownell & Drummond, 2020; Center on the Developing Child, 2020a, 2020b; Copple & Bredekamp, 2009; Trawick-Smith, 2018). In turn, there is widespread recognition of the pivotal role early childhood educators play in shaping and facilitating prosocial behavior in young children (Blewitt et al., 2018; Bradley, 2019; Brownell & Drummond, 2020). Although nomenclature and approaches vary across disciplines and settings (e.g., social-emotional learning, character-based education), a growing body of literature suggests a concerted effort amongst researchers, policymakers, and practitioners to prioritize early *prosocial education* that promotes prosocial behavior, moral reasoning, social skills, civic engagement, social-emotional learning, and character (Bergin, 2014, p. 51).

Despite the widespread consensus on the heightened need for and benefits of early prosocial education, stakeholders are faced with formidable challenges. First, it isn't clear how best to mitigate the pervasive and detrimental effects that adverse childhood experiences (ACE) and early life stressors (ELS) have on the development of prosocial behavior, social relationships, and overall development. Also, most stakeholders agree on the need to respond to the increasing institutional and curricular demands that have eroded opportunities for play and facilitated social interaction across early childhood settings. Finally, there is strong agreement on the need to adopt a less disparate approach to prosocial education considering these challenges to improve the developmental and educational trajectory of young children, as well as broader societal outcomes (Brady, 2016; Burchinal, 2002; Nguyen et.al., 2016; Van Hoorn et al., 2015).

Barriers to Prosocial Behavior in Young Children

Multi-year enrollment in early childhood programs has grown exponentially across the globe (78% of 3-year-olds, 87% of 4-year-olds) (Blewitt et al., 2018). Increased program enrollment across the most formative developmental years has necessitated closer scrutiny of policies and practices commonly adopted in these settings to promote children's early social, emotional, and cognitive development (Blewitt et al., 2018; Brownell & Drummond, 2020). This includes heightened concern for children at risk for developmental delays and those from historically marginalized, underserved populations with limited protective factors and/or access to systems of support (e.g., children living in poverty) (Brady, 2016; Center on the Developing Child, 2020b).

It is well documented that early exposure to ACE/ELS can result in structural changes to brain development, causing enduring and detrimental effects on children's cognition, learning, and behavior (Bogdan et al., 2012; Birn et al., 2017). Children who experience elevated and prolonged levels of ELS exhibit a wide range of maladaptive internalized and externalized behaviors that manifest early in life and intensify over time (Ambrose et al., 2010; Nguyen, Garnett et al., 2021; Treat et al., 2020). It is estimated that as many as 1 in 4 preschool-aged children have had one or more ACEs (e.g., maltreatment, abuse, neglect) that contribute to long-term learning and behavioral impairment in the absence of early and focused intervention (Litscomb et al., 2021). Further, CDC (2021) reports a direct relation between poverty and child abuse and neglect (i.e., rates of child abuse and neglect are 5 times higher in families with low socioeconomic status).

Contributing to the challenge is a proliferating focus on academic preparedness of young children during early childhood programs, with conflicting perspectives on the value of play. This early socialization to school readiness detracts from the emotional resiliency needed to overcome risk factors common to childhood (Ashiabi, 2007; Sciaraffa et al., 2018; Souto-Manning, 2017). Consequently, there is a persisting need to prepare early childhood practitioners to meet the intense, diverse academic and social-emotional needs of the growing population of children in their care (Sciaraffa et al., 2018), while also supporting their sense of self-efficacy and general well-being (Nguyen, Garnett et al., 2021). Given the complexity of these challenges, we propose a more interdisciplinary and collaborative approach to prosocial education and aim to turn attention to fields that have overcome similar institutional constraints by cultivating the science of compassion into daily practices.

Role of Compassion in Prosocial Behavior

Compassion has been defined as an affective, cognitive, and behavioral process that compels one to internalize and alleviate another's suffering (Seppala et al., 2017). Rather than being inherent from birth, children can learn to behave in compassionate ways. Compassion is a skill that can be developed through experience and continuously shaped and reinforced (Volling et al., 2008). This process sets compassion apart from similar constructs that exemplify prosocial behavior. These constructs include (a) *empathy* (the recognition and sharing of another's feelings, physical condition, or suffering) (De Waal, 2008), (b) *sympathy* (a solely affective response that illustrates feelings of sorrow or concerns toward others) (Seppala et al., 2017), (c) *mindfulness* (the internal recognition of one's state of mind, or to become aware, accept, and appreciate situations as they occur) (Bishop et al., 2004), (d) *self-compassion* (compassion held for oneself to mitigate negative thoughts, pain, and suffering (Neff, 2003; Neff et al., 2020), (e) *altruism* (concern and caring about the feelings and happiness of others (Batson, 2011), and (f) *kindness* ("an essential quality or character that arises from sympathy or forbearance") (Merriam Webster Dictionary, 2004, pp. 400).

By this distinction, compassion is an observable, measurable behavior with an equally observable and commonly occurring environmental antecedent (i.e., instances in which a child observes the suffering of another) (Seppala et al., 2017). Based on this distinction, compassion is not merely a component of prosocial behavior but is also an inherently "teachable" skill. That is, compassion can be taught both in carefully contrived situations and in naturally occurring contexts in early childhood and other settings. Further, it is a skill that is amenable to the teach/model/practice paradigm, an evidence-based and developmentally appropriate practice for young children that is well-aligned with the instructional repertoire of many early childhood educators (Nguyen, Garnett et al., 2021).

Converging Compassion Science with Prosocial Education

For the past two decades, institutions of higher education (IHEs) have recognized the importance of incorporating compassion and related pro-social constructs into health and human service preparation programs (e.g., social work, psychology) (Nguyen, Garnett et al., 2021). This innovation has led to the adoption of several compassion-focused curricula aimed at promoting positive health outcomes for providers and their recipients of care in the medical and biological fields (Epstein et al., 2005; Gilbert, 2005, 2010, 2014; MacBeth & Gumley, 2012; Reddy et al., 2013; Strauss et al., 2016). Specifically, compassion science research has produced compelling evidence of effects on several physical, psychological, cognitive, emotional, and social function

measures in these disciplines (e.g., clinical outcomes, patient satisfaction, recovery from pathology) (Condon et al., 2013a, 2013b; Jazaieri et al., 2014; Pace et al., 2009, 2013; Reddy et al., 2013; Stellar et al., 2015).

Several early childhood researchers have called for a more intentional focus on compassion-based strategies that promote pro-social behavior (Eisenberg et al., 2015; Willis, 2016) as a means for preparing children "to become resilient, compassionate and academically successful in later school-aged years" (Willis, 2016, pp. 663). This notion, and the benefits of compassion science, however, have yet to be translated into common practice across early childhood settings (Nguyen, Garnett et al., 2021). Given the pervasive and enduring effects adverse childhood experiences and early life stressors have on children globally, and the compelling outcomes of integrating compassion science reported in health and human services disciplines, a robust model for converging compassion science with prosocial early childhood education is warranted and arguably long overdue.

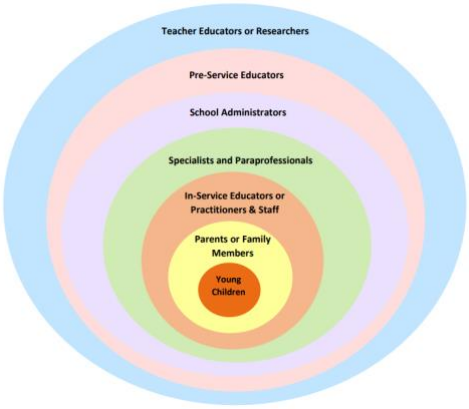
In the remainder of this article, we (a) provide an overview of the emerging construct of compassion science, (b) describe a collaborative model for promoting the science of compassion across early childhood stakeholders and settings, (c) recommend an instructional paradigm for enhancing social relationships by proliferating compassionate behaviors among stakeholders, and (d) discuss implications for future inquiry and practice.

A Collaborative Model for Promoting Compassionate Behavior in Early Childhood

A vast body of research has shown the indispensable role of social relationships and school-home collaborative practices that enhance student learning outcomes across developmental domains and promote family well-being (Berger & Riojas-Cortez, 2020; Center on the Developing Child, 2020a; Gonzalez-Mena, 2013; Nguyen, Darling et al., 2021; Strier & Katz, 2016; Turnbull et al., 2011). In this research, effective faculty, staff, and student interactions have been perceived to include some level of responsiveness, helpfulness, approachability, compassion, and understanding toward one another (Furnham & Chamorro-Premuzic, 2005; Paolini, 2015).

Given the detrimental effects stated in the previous section regarding the health and well-being of young children, there is a need to cultivate compassionate behaviors among *all* stakeholders. A conceptual model for this effort is summarized in Figure 1. This framework is based on social learning and ecological systems theories (Bandura, 1977; Blanchard et al., 2015; Bronfenbrenner, 1979).

Figure 1
Collaborative Early Childhood Model for Promoting Compassionate Behaviors of All Stakeholders



Social learning theory posits that children acquire various skills and behaviors by consistent observations, interactions, and imitations from the external environments and other individuals. As stated in a four-step behavioral sequence by Bandura (1977), an individual: notices something in the environment, remembers what was noticed, produces a corresponding behavior, and receives a consequence (e.g., reinforcement or punishment) that alters the likelihood that the behavior will emerge again.

The premise of social learning and ecological systems theory supports the interconnectedness between overlapping contexts (i.e., microsystem, mesosystem, exosystem, macrosystem, and chronosystem) starting from the child at the central layer, and then "branches out" to outer layers, such as immediate families, other individuals or professionals, community organizations, or governmental agencies (i.e., collaborations between various involved stakeholders) that directly influence the child's behavior (Bronfenbrenner, 1979). In short, for the potential increase in social relationships and the successful cultivation of compassionate behavior, this prosocial skill needs to be regularly taught, modeled, and practiced by all involved stakeholders (see Figure 2). The following sections emphasize: (a) related neuroscience and the suggested instructional paradigm in the context of prosocial education, (b) emerging five elements of compassion and the specific role of each stakeholder, and (c) a collaborative model for all stakeholders.

An Instructional Paradigm for Promoting Compassionate Behavior

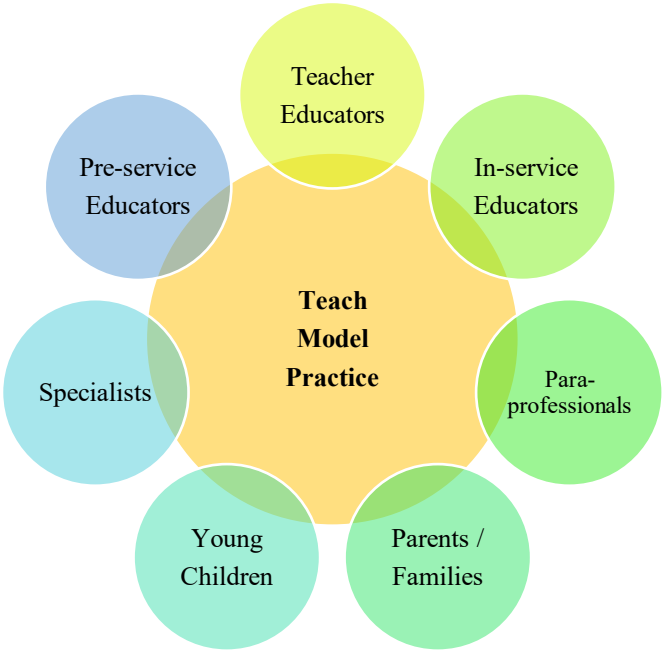
The ability of young children to develop foundational brain circuits (to learn and focus, to filter distractions, and to process incoming information) is analogous to having a complex "air traffic control system" that manages daily busy arrivals and departures (i.e., countless motoric and cognitive tasks) of various flights on multiple runways (Center on the Developing Child, 2020b; National Scientific Council on the Developing Child, 2011, 2021). In neurotypical brain development, the "air traffic control system" metaphor is referred to as executive function (i.e., a collection of skills that assist children to focus and process information from their external environments, monitor errors, and adjust plans of action). From birth, human genes produce over a million synapses (neuronal connections) per second. During these incremental periods of neuronal connections and development, it is the consistent observations and emulations from one

another (i.e., the consistent teaching, modeling, and practicing compassionate behaviors between stakeholders) that guide children's brain construction and proliferate the complexity of the brain architecture and its related functions throughout the lifespan (Kushnir et al., 2010; National Scientific Council on the Developing Child, 2021; Poeppel et al., 2020). Further, in longitudinal investigations using magnetic resonance imaging (MRI) during the last three decades, various studies reveal that our genes provide an initial blueprint to assist children with the early and subsequent acquisition of social skills from their surrounding environments (Poeppel et al., 2020). Additionally, evidence from recent findings in neuroscience extends our understanding of foundational skill acquisition to causes, mechanisms, and leverage points that can enhance children's learning (Bogdan et al., 2012; Howard-Jones, 2014; Poeppel et al., 2020).

Nguyen, Garnett, and colleagues (2021) previously illustrated the 3-component instructional paradigm (i.e., teach/model/practice) to describe how to embrace and cultivate compassionate minds in early childhood classrooms. Based on (a) the premise of prosocial education, (b) evidence regarding learning processes and how brain circuitry works, and (c) the tenets of social learning and ecological system theories, compassionate behaviors should be specifically taught, modeled, and practiced by all related stakeholders. That is, the more opportunities are provided to children, and the earlier prosocial skills (such as compassionate behavior) are introduced to children or between stakeholders, the more likely an increased number of neuronal connections are involved that – in turn - will lead to a rise in efficiency, density of circuitry, and speed of learning for these individuals (Ambrose et. al., 2010; Mosier, 2013; National Scientific Council for the Developing Child, 2021). Figure 2 illustrates the significance of the 3-component instructional paradigm.

Figure 2

3-Component Instructional Paradigm for Promoting Compassionate Behaviors Across Stakeholders and Settings



Further, from a neuroscience perspective, healthy brain development depends on both early and subsequent meaningful interactions and experiences. However, brain development also

relies on how frequently a particular gene can be "expressed" or "activated" to execute a certain task, to acquire learning strategies, or to increase overall productivity (Champagne, 2010; Kirschner, 2017; Lupien et al., 2009; Meaney, 2010; Moeller et al., 2018; National Scientific Council on the Developing Child, 2011; Yale Center for Emotional Intelligence, 2021). For instance, it would seem illogical for teacher educators or school administrators to expect novice early childhood educators to show mastery in embracing and cultivating compassionate behaviors with young children if they have not been taught, modeled, and practiced compassionate social skills during their teacher preparation programs. The following section focuses on the emerging five elements of compassion and the recommended collaborative model for stakeholders to promote compassion at all levels and within various settings.

The word compassion originates from the Latin root compati, meaning "to suffer with" (Seppala et al., 2017; Strauss et al., 2016). In past and existing literature, the word was first depicted as the ability to recognize the pain and suffering of others, to have feelings toward another person's suffering, and the determination to take actions to mitigate the suffering of others (Goetz et al., 2010). Strauss et al. (2016) conducted a meticulous examination of the various constructs and definitions of compassion, including quality ratings of nine existing measures of compassion. As a result, Strauss et al. recommended a definition of compassion with five major elements based on: recognizing suffering; understanding the universality of pain and suffering in human experience; feeling empathy toward the person who is suffering and connecting with the distress (emotional resonance); tolerating uncomfortable feelings from the person who is suffering (e.g., distress, anger, fear) and becoming more open and accepting toward the suffering person; and taking actions to alleviate the suffering of others.

Table 1 illustrates the collaborative model of how each related stakeholder can use the 3-component instructional paradigm, the emerging definition of compassion science, and Bandura's four-step behavioral sequences to teach young children to master the pro-social skills of compassion during daily routines.

Table 1
Instructional Paradigm to Promote Compassionate Behaviors for All Stakeholders

Element	Related Stakeholders' Roles / Strategies
Recognize suffering	• Teach/model/practice compassionate behaviors between related stakeholders to recognize their own feelings of suffering and the same feelings in others (*affective empathy*). (*Bandura's step one of four behavioral sequences: notice something in the environment)* *Compassion behavior* (Jazaieri, 2018)
Understand the universality of pain & suffering in human experience	• Teach/model/practice compassionate behaviors between related stakeholders to acknowledge and recall their own difficulties and suffering, and that of others as part of the overall human experience. (*Bandura's step two of four behavioral sequences: the individual remembers what was noticed)* *Compassion behavior* (Jazaieri, 2018)
Feel empathy and connect with the distress (emotional resonance)	• Teach/model/practice compassionate behaviors between related stakeholders to "feel the pain", difficulties, or suffering (cognitive empathy) of their own and others. Learn how to express sensitivity to themselves and others. Place themselves in the others' situations or perspectives. (*Bandura's step 3 of four behavioral sequences: the individual produces a corresponding behavior)* *Compassion behavior* (Jazaieri, 2018)
Tolerate uncomfortable feelings of the suffering person (e.g., distress, anger, fear) and become accepting	• Teach/model/practice compassionate behaviors between related stakeholders to tolerate and accept the uncomfortable feelings in response to "witnessing" pain and suffering of their own and others. (*Bandura's step 4 of four behavioral sequences: the environment or individual deliver a consequence that alters the likelihood the behavior will emerge again)*

		Compassion behavior (Jazaieri, 2018)
Motivation to act to alleviate the suffering and pain	• Teach/model/practice compassionate behaviors and creating compassion visualizations between related stakeholders to take actions (actively) to alleviate their own and other's pain, suffering, or difficulties (motivational empathy). Offer real solutions to help themselves and others.	*Compassion behavior; Compassion visualizations* (Jazaieri, 2018)

Note: Adapted from Nguyen et al., 2021; Jazaieri et al., 2018; Strauss et al., 2016.

Collaborative Roles of Stakeholders

As seen in the previous section and Table 1, stakeholders should consider using the instructional paradigm (teach/model/practice) in conjunction with four other supplemental components: (a) five elements of compassion science, (b) Bandura's four-step behavioral sequences, (c) compassion behavior (through the acts of caring, understanding, and forgiving), and (d) compassion visualizations to embrace and cultivate compassionate behaviors with one another during daily routines. By adhering to the instructional paradigm (i.e., intentionally for direct instruction, activating prior knowledge, scaffolding skills, reviewing, and retaining acquired skills), the knowledge and skills of compassion that stakeholders acquire will come from each other's teaching, while being steadily modeled by all involved stakeholders. Further, stakeholders will gain ample opportunities to practice the recently acquired skills and knowledge of compassion with one another. This instructional paradigm should be used to guide stakeholders for each of the following five elements of compassion and the four supplemental components in Table 1 and Figure 2.

Teacher Educators or Researchers

Stakeholders should learn to identify (i.e., recognize suffering as the first element of compassion, Bandura's first behavioral sequence-noticing something in the environment) and convey their feelings, to be considerate of others' feelings (affective empathy) or sufferings, and to use compassionate behavior as a strategy to mitigate the existing difficulties, pain, or sufferings of oneself and others (Bandura, 1977; Jaizaieri, 2018; Strauss et al., 2016). For example, pre-service educators can be presented with contrived scenarios to identify instances of suffering using weekly supplemental videos, naturally occurring in-class situations, and discussions/lecture notes from their teacher educators.

When presented with situations where they or other pre-service educators experience difficulties, possible questions for teacher educators to use (teach, model, and practice) during weekly lectures include (i.e., noticing something in the environment):

- I noticed that you have been absent from the last few class meetings. Is everything ok?
- How may I help you with questions, concerns, assignments, or missing lectures?
- In your interpretation, what is a compassionate act?

- How do you feel when you are being compassionate with your friends in class or with other human beings?
- Would you like to be treated with compassion all the time?
- As prospective early childhood educators, how do you plan to assist (i.e., take concrete actions) your friends or other human beings in various settings when you know they are in trouble or experience problems with their students?

Additionally, teacher educators should facilitate (teach, model, and practice) weekly conversations with pre-service educators in a respectful, professional manner, and let them take turns to lead various class discussions (e.g., bridging educational theories or course contents with daily practical implications to help them recognize and alleviate existing stress, difficulties, or suffering) and options in terms of responses and their interpretations (e.g., how should each of them attempt to assist themselves and other pre-service educators with course-related items or ordinary social issues in daily routines?). Simmonds (2014) asserted that our prior acquired experiences set orderly pathways for what information enters the individual's consciousness and greatly affect how the brain incrementally processes information. That is, through mutual social experiences, both teacher educators and pre-service educators acquire the use of consistent teaching, modeling, and practicing from one another. This learning typically starts with teacher educators. As educators progress, they learn to identify daily issues or difficulties, and exhibit foundational compassionate behaviors toward one another.

School Administrators

Stakeholders should be taught to acknowledge and learn to recall their difficulties or suffering- and that of others- as part of the overall daily human experience (i.e., understanding the universality of pain and suffering in human experience as the second element of compassion, Bandura's second behavioral sequence-remembers what was noticed). They also learn to use compassion behavior as a strategy to actively engage in the acts of alleviating the difficulties, pain, or suffering of oneself and others. For instance, school administrators can pick up the foundational work of teacher educators from teacher preparation programs previously described to communicate and convey uneasy feelings, various types of suffering or stress with themselves and their in-service educators or staff; this becomes a natural part of their lived experience with the use of compassion behavior to help one another to lessen the existing difficulties, stress, or suffering (Bandura, 1977; Jazaieri, 2018; Strauss et al., 2016) during scheduled staff meetings.

In their previous published work, Nguyen, Garnett, et al. (2021) described mindful breathing as a helpful strategy to alleviate uneasy feelings or daily stress and to enhance mental concentration among young children. Similarly, school administrators might implement this approach to assist themselves, their in-service educators, and staff. Mindful breathing is also known to advance brain integration, heighten compassionate responses to suffering, generate a calming effect to reduce stress, elevate self-awareness and productivity, and reciprocate to the focused attention to live fully and acknowledge the surrounding environments in the present moments (Condon et al., 2013a; Frazer & Stathas, 2015; Gregoski et al., 2011; Harris, 2017; Hawn, 2011; Jennings, 2015; Nhat, 1991). For example, a school routine such as a monthly faculty meeting may have administrators, in-service educators, and staff sit with their eyes closed, or focus on a specific object, relax their bodies in a comfortable position, keep their backs upright, and repeat the inhale and exhale tasks in an orderly sequence (e.g., 3 seconds to inhale, hold breath for 2 seconds, and a relaxed exhale for 4 to 5 seconds). School administrators

can use this approach as "break-in" exercise routines lasting from 4-6 minutes before or in between faculty meetings.

Further, school administrators can provide directions for in-service educators and staff to relax their minds and bodies throughout (i.e., before, during, after) these short but critical mindful breathing sessions. It is also critical for school administrators to illuminate with in-service educators and staff that experiencing hardships, daily stress, or suffering is a natural part of the day-to-day human experience. That is, the more frequently they are taught, modeled, and practiced by the school administrators (i.e., or with one another) to use mindful breathing to mitigate daily stress (e.g., work or family responsibilities), the more likely these professionals will develop resilience to endure daily stressors. Birn et al. (2017) and Bogdan et al. (2012) asserted that individuals prone to consistently high levels of stress (i.e., particularly with early life stress) without timely intervention or relaxation routines that serve as external stimuli to stimulate the brain's architecture) are at a higher risk for developing subsequent behavioral issues that result in a negative impact on work-related tasks and productivity. Further, formal on-campus training programs or periodic and structured professional development opportunities with well-trained guest speakers or ambassadors in compassion science can be helpful for in-service educators, staff, and school administrators to: (a) learn about their own emotions (e.g., angry, sad, happiness, anxiety, hurtful), (b) participate in whole and small discussions to share learning experiences, (c) enhance their own self-regulation, (d) participate in guided meditation to improve awareness, (e) engage in listening and communicative exercises to build compassionate interactions, and (f) further acknowledge daily difficulties as part of the human experience (Center for Compassion and Altruism Research and Education, 2020; Center for Contemplative Science and Compassion-Based Ethics, 2020; Center for Mindful Self Compassion, 2020; Gilbert, 2014). Compassion skills serve as valuable knowledge for school administrators to cultivate (teach, model, and practice) the foundational seeds of compassion (i.e., acknowledging their suffering as part of the overall human experience) for themselves and their in-service educators and staff.

Specialists and Paraprofessionals

Stakeholders should be introduced to "feel the pain", difficulties, or suffering (cognitive empathy) of their own and others. Feeling empathy and connecting with the distress or emotional resonance is the third element of compassion and represents Bandura's third behavioral sequence-the individual produces a corresponding behavior. This assists stakeholders to continue to use compassion behavior as a strategy to seek solutions to mitigate existing pain, difficulties, or suffering for themselves and others (Bandura, 1977; Jaizaieri, 2018; Strauss et al., 2016). Specialists and paraprofessionals can build on the work of both teacher educators and school administrators to keep working with their in-service educators or practitioners, school administrators, and young children. For example, during daily interactions, these stakeholders can be presented by specialists and paraprofessionals (teach, model, and practice) with other contrived situations that would assist them in identifying instances of hardships, stress, or suffering and work with each other and themselves to improve empathic behaviors (i.e., an individual produces a corresponding behavior). When presented with situations where other in-service educators, school administrators, and young children are experiencing difficulties or stress, possible questions for specialists and paraprofessionals to use during daily routines (i.e., with consistent praise for their efforts and to facilitate various conversations to provide these

stakeholders the opportunities to share their thoughts regarding the need to convey empathy toward others):

- How often do you express compassion to yourself and others (i.e., children, in-service educators, or school administrators)?
- Have you seen (lately) a compassionate act between in-service educators, school administrators, staff, or children?
- When you are being compassionate to yourself or other professionals, how do you feel?
- Can you share a time that you were compassionate to yourself or other professionals?
- When was the last time you took actions to mitigate stress, difficulties, or suffering for yourself and other professionals?

During the past 19 years since its establishment, prominent researchers from the Center on the Developing Child (2020a) have emphasized that excessive activation of stress response systems affects the brain and other organ systems in various ways (i.e., the lack of cognitive empathy). That is, when any of these stakeholders feel threatened or stressed, their bodies immediately prepare to act by increasing their heart rates, blood pressures, and stress hormones (e.g., cortisol) (i.e., the individual produces a corresponding behavior). Further, when stress response systems are triggered with consistent and supportive social relationships, these physiological fluctuations are "leveled out" and brought back to baseline levels. Conversely, if the stress responses are highly elevated and prolonged in nature without any supporting social relationships, other biological systems can become abruptly overloaded or drastically impaired. In other words, these specialists and paraprofessionals should attempt to work with in-service educators, school administrators, and young children in a collaborative approach to promote empathy that would serve as an incremental catalyst to help their physiological fluctuations remain relatively stable (Center on the Developing Child, 2020b; Lupien et al., 2009).

Parents and Families

Stakeholders should be familiar with and learn to tolerate uncomfortable feelings of their own and the suffering of others. This involves tolerating uncomfortable feelings of the suffering person (such as distress, anger, or fear) as the fourth element of compassion. This incorporates Bandura's fourth behavioral sequence-an individual delivers a consequence that alters the likelihood the behavior will emerge again. At this level, compassion behavior has become a continued strategy to actively alleviate existing difficulties, stress, or suffering of their own and others (Bandura, 1977; Jaizaieri, 2018; Strauss et al., 2016). For example, parents and caregivers should be guided (or taught), modeled, and practiced by in-service educators or classroom practitioners (i.e., an individual delivers a consequence that increases the chance for the reoccurrence of behavior) on how to endure their daily stress, the stress of taking care of their children, and learn to accept the existing hardships or difficulties. Effective collaborative practices between in-service educators and parents or families are well established in the literature, and these practices are as consequential as the acquisition of skills in any of the five elements of compassion (Berger & Riojas-Cortez, 2020; Blanchard et al., 2015; Turnbull et al., 2011). In-service educators might consider using the subsequent framework to develop functional collaborations with families to promote the fourth element of compassion along with the other four related components. Nguyen, Darling, and colleagues (2021) suggested a separate

three-component framework (i.e., effective bidirectional communication, rapport and trust, and empathy) for building connections among families, young children, and primary educators. First, to heighten bidirectional communication, in-service educators should consider the following strategies with families or parents (See Table 1 from Nguyen, Darling et al., 2021 for detailed descriptions):

- Be clear and succinct in all forms of communication (clarity).
- Listen responsively to families' expressed concerns (active listening skills).
- Become familiar with language variations, customs, and backgrounds (become aware and sensitive to cultural and linguistic differences).
- Respond to families' concerns promptly (timely response to concerns).

Second, in building effective initial rapport and trust with families, in-service educators should be:

- Respectful and friendly (approachable);
- flexible and have an open-door policy (accessibility);
- proactive and positive in all interactions/communications (optimistic).

Third, in line with the objective of the fourth element of compassion and promoting foundational empathy, in-service educators should also:

- Place themselves in the family member's place or perspective and ask, " What would I do in a similar situation? (genuine care)
- Be sensitive toward families' difficulties and offer concrete solutions or assistance (sensitivity).

Further, during daily interactions (e.g., teacher-parent conferences or daily drop-off and pick-up periods) with in-service educators, parents or families can be presented with contrived scenarios to develop their awareness and ability to modify their feelings and to observe hardships or unstable emotional states (such as anger or distress from their children or other family members). The aim is to become able to accept these various feelings as tolerable, routine experiences (Nguyen, Garnett et al., 2021). Possible questions for in-service educators to use with families during these frequent and routine interactions include:

- I have not had the chance to speak with you lately. Is everything ok with you, your work, and your child (i.e., your student in class) at home?
- If I may ask, when you know or observe that you, your child, or another person is stressed out or not happy, what do you do to understand, alleviate, and accept the frustrations of yourself, your child, or the other person?
- Please know that I am willing and available to assist you. Could you please let me know via email, phone calls, or notes so that I can arrange a time at your convenience to work with you as soon as we can?
- I know it is difficult to handle various issues all at once and by yourself. If you can, could you prioritize your daily schedules or issues and attempt to tackle them one at a time?

Then, provide concrete examples for families to understand the importance of solving daily issues in an organized and systematic manner, and to put their experiences to the test with concrete actions.

Young Children

Finally, the last type of stakeholder should be taught, modeled, and practiced by their parents or family members on how to mitigate their own and families' stress, pain, and suffering (i.e., act to alleviate suffering and pain as the fifth element of compassion) through the continued use of compassion behavior and compassion visualizations (Jaizaieri, 2018; Strauss et al., 2016). For instance, in a home environment or public settings (e.g., during a family road trip), family members can routinely engage with their children to create mental images or to practice visualizing compassionate images that are relevant to them (e.g., an image of a young child picking up an injured insect and placing it on a dry place on higher ground; or using a YouTube video to illustrate compassionate acts. Through these simple scaffoldings of lived and concrete social experiences (i.e., Vygotsky's zone of proximal development; Vygotsky, 1978), young children begin to develop and scaffold their thought processes and skills (e.g., sparing the lives of these helpless creatures, being kind toward other humans). Further, in terms of children's incremental development, it is going to be a daunting task for family members to teach or expect this rather complex behavior (compassion) to be exhibited by their young children without scaffolding these skills in humane education during their early developmental years (see Jalongo, 2014, for a fuller description of humane education in early childhood).

Further, skills acquired from these foundational humane acts of kindness seamlessly set up the crucial stage for young children to learn to identify, understand, and develop the early seeds of empathy, compassion, and respect for all living things; this is humane education (Jalongo, 2014; Nguyen, Garnett et al., 2021). It is worth noting that family members also benefit from these mutual interactions (e.g., the proud feelings of raising a capable and compassionate child). Possible prompts for family members to use during the scenarios with children include:

- Close your eyes and in your mind imagine you or someone else being compassionate to yourself or toward others.
- Can you recall a time that you or someone else did something kind or compassionate for yourself or others?
- Do you feel happy when your compassionate words or acts helped other people become less stressed?
- In your head, think of when you last felt motivated to do something to help yourself or others.
- How often did you help yourself and others to overcome difficulties or stressful situations?

After the children have had sufficient opportunities to learn from family members to generate these visual images in their minds, they should be prompted to use these visualizations and transfer them into their diaries. Finally, family members can then participate in various discussions with their children in different settings to share and validate together the various versions of their own compassion visualizations.

Implications for Future Inquiry and Practice for All Early Childhood Stakeholders

The model for promoting compassion science in early childhood is advocated, in part, based on research coming from various disciplines in medicine and the health sciences (Bogdan et al., 2012; Fox et al., 2010; Pace et al., 2009; Poehlmann-Tynan et al., 2019). The model also incorporates long-standing theoretical frameworks that influence family, social relationships,

interactions, and child development (Bandura, 1977; Bronfenbrenner, 1979). And, like many initiatives in education, the model draws its face validity from pragmatic efforts of practitioners and the logic of curriculum design. However, an instructional model for teaching compassion to young children also shares a common shortcoming with many other educational initiatives; to date, incorporating compassion into early childhood through an instructional model lacks a body of robust research to support the practice.

The proposition that compassion is an actionable set of human behaviors will be a stretch for some educators. To date, there has been no cogent research agenda into the efficacy of adopting an instructional model for compassion science in early childhood, and only Nguyen, Garnett et al. (2021) have directly called for increased research attention for this model. This mirrors the growth in other areas of education where advances occurred with little consensus on what constitutes a research basis for the discipline (Brady, 2021; Grossman & McDonald, 2008; Kuh & O'Donnell, 2013). Under these circumstances, the field relies on program reviews, evaluations, correlational studies, administrative data, and research reviews that often are not specific to student learning (Whitehurst, 2012). Like the literature and studies they review, all contribute to a general understanding of an issue (e.g., compassion), but few specifically address the learning context (e.g., the efficacy of an instructional model for compassion).

To examine the benefits of cultivating compassion among young children and extending the benefits beyond early childhood years, we propose a 3-component framework for research that will drive practice, policy, future legislation, and funding decisions for future research. An organized research agenda should target (a) intervention research, (b) impact studies, and (c) policy studies that specifically address the range of stakeholders who interact with young children. Each research typology should include attention to the 5 elements of compassion behavior and include the full range of stakeholders.

Intervention Research

Because the model lives within an instructional context, there will be a need to pursue intervention research that targets curriculum and instruction questions. For example, as children develop, it is likely that certain instructional strategies will become more or less effective in promoting learning of compassion behaviors. The range of developmentally appropriate instructional practices should be pursued to see which strategies might be more efficacious for promoting the different clusters of compassion behavior (e.g., recognition vs tolerance), and for different levels of learning (e.g., initial acquisition vs retention over time). Because compassion behavior is a relatively novel idea, educators will need to gain some sense of behavioral norms for these newly learned behaviors. For example, there is no consensus currently on how much compassion might be expected among 3-year-olds vs 6-year-olds, or for feeling empathy for humans vs other mammals vs other living things.

Impact Studies

Impact studies frequently incorporate correlational designs based on secondary data sets and archival reviews. In early childhood, these secondary analyses might include interdisciplinary data sets from language specialists, health care providers, and other stakeholders. The research objective often is to search for impact predictors of variables that are difficult to manipulate in intervention studies. Other studies administer survey measures to understand the impact of events on specific individuals (other young children, teachers, families), or on broader audiences including legislators or teacher groups. Methods often include

"investigative reporting" along with a range of qualitative research methods that focus on the impact of children learning compassion behaviors. Researchers who conduct impact studies frequently describe their work as "telling a story." These might include in-depth ethnographies or a series of case studies to understand "everyday stories." Impact studies to better understand compassion science could be designed for both large and small venues. For example, by targeting the fifth level of compassion behavior (motivation to act), a story can be told of the impact of teaching this on individual children who participate in the instruction; conversely, a school-wide study would evaluate the impact of school-wide curriculum delivery on long-term discipline referrals and incidents of violence within the school.

Policy Studies

In contrast to impact studies (with a research focus on individuals or localized groups), policy studies typically examine the impact of events on broader outcomes, such as changes in staffing or funding policies in a school or district. Research methods for policy studies often include retrospective studies, economic analyses, simulated modeling studies, or longitudinal studies. These studies might be used to influence accreditation activities, legal and regulatory initiatives, program sustainability studies, and cost–benefit analyses. Policy research might be used to empower individual teachers to implement curriculum changes in their classrooms or could have a district-wide or broader emphasis.

Implications for Practice

Applying an instructional model for compassion to early childhood cannot rely on research alone. Given the paucity of research, and the relatively unknown nature of compassion as a set of behavioral skills, teaching compassion to young children is clearly in its infancy. To become an efficacious developmentally appropriate practice will require five obvious actions.

- Stakeholders in early childhood will need to gain a clear understanding of the concepts and terminology of compassion science;
- Stakeholders will need to see and hear demonstrations of "compassion in action" so they can gain a clear understanding of responses to pain that might not be in their current repertoires;
- Stakeholders will need to have the opportunity to explore small- and large-scale teaching interactions – both as learner and as teacher;
- Stakeholders will need to have opportunities to obtain constructive feedback on their own professional development in learning compassion; and finally
- Stakeholders will need opportunities to think, reflect, ponder, and otherwise test and change their own perceived gains as "students of compassion."

A Conclusion Regarding Compassion

In recent years, there have been increases in concern that we are seeing a diminution of civility in everyday life. Many citizens have begun to fear that once dependable social institutions are experiencing an uncivil transition. In response to this, some educators have called for an explicit pivot toward promoting and integrating compassion science with prosocial education, starting with young children and the stakeholders in early childhood education. In this article, we proposed an active model for heightened social relationships by integrating compassion science into early childhood as a means for creating more civil and compassionate actions in society. We described the instructional model defining compassion as a set of

teachable and learnable behaviors. We also summarized a 3-strategy approach to building a research agenda to guide this transition.

Our own commitment to the transition to compassion is both personal and professional. We are in the initial stages of adopting the research agenda to conduct a series of interventions that will guide early childhood practice. This includes conducting studies with stakeholders to gain a fuller understanding of their knowledge, skills, and attitudes about compassion. Next, we intend to conduct subsequent studies to investigate whether there are changes in knowledge and skills because of low- and high-impact interventions to teach these sets of behaviors. For all of our studies, we intend to examine the impact of the findings on stakeholders and to influence early childhood policies in positive ways. Finally, we will continue to learn to embrace compassion in our own everyday lives.

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The Value of Extracurricular Activities: Beyond Academic Achievement

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Abstract

This literature review explores the significant value of extracurricular activities (ECA) beyond the typical focus on academic achievement. While academic success remains a key indicator of student performance, extracurricular activities have been shown to play a pivotal role in developing students' social, emotional, and cognitive skills. This literature review examines how participation in ECA influences students' holistic development, including skills such as leadership, teamwork, time management, and resilience. It also highlights how ECA contributes to personal growth, improves mental health, and fosters a sense of community. Drawing upon current studies (2021-2025), this article provides a comprehensive review of the latest research on the positive outcomes associated with extracurricular involvement and argues for a more integrated approach to education that values both academic and extracurricular engagement. Key insights from the reviewed studies discuss the implications for educational practice, suggesting that ECA should be integrated into curricula and supported through adequate funding, administrative resources, and flexible scheduling. Findings from the literature suggest the need for more longitudinal studies to assess the long-term impact of ECA and explore future research directions, including the role of digital ECA and its effects on diverse demographic groups.

Keywords: *Extracurricular Activities, Academic Achievement, ECA*

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Introduction

Extracurricular activities (ECAs) cover a broad spectrum of non-academic pursuits that complement formal education (Peo, 2024). These activities, from sports and arts to clubs, volunteering, and internships, are vital in shaping students' personal, social, and cognitive development (Si, 2025). As educational systems evolve and prioritize a holistic approach, ECAs gain recognition for their contributions beyond academics (Thames, 2023). This introduction defines ECA, articulates its significance in different educational contexts, and traces the historical shift from narrow academic priorities to a more comprehensive perspective that recognizes extracurricular engagement.

Definition of Extracurricular Activities (ECA)

Extracurricular activities are typically defined as structured activities that take place outside of regular classroom hours and are not part of the formal curriculum (de los, 2024). They encompass a wide range of pursuits that cater to students' interests, talents, and passions. These activities can be broadly classified into several categories, including:

Sports: Physical activities such as team sports (e.g., soccer, basketball, football) and individual sports (e.g., tennis, swimming, athletics). Sports encourage physical fitness, teamwork, discipline, and resilience, and often serve as a platform for leadership and social interaction (Almashari, 2024).

Arts & Culture: Arts and Culture comprise disciplines such as visual arts, music, drama, dance, and literature. Participation in the arts cultivates creativity, critical thinking, and emotional expression, helping students gain a multidimensional understanding of their world (Poudyal, 2025). Arts programs offer outlets for developing and refining talents, thereby contributing to students' cultural and emotional growth.

Club & Societies: Clubs and Societies range from academic groups, such as debate teams, science clubs, and student government, to non-academic organizations, including photography, chess, and robotics. Clubs allow students to pursue specialized interests, fostering community and camaraderie among like-minded peers (Van, 2021).

Volunteer Work: Volunteering and community service expose students to real-world challenges, providing opportunities to build empathy, social responsibility, and leadership abilities (Uysal, 2025). Service activities also strengthen students' sense of belonging and connection to their communities, instilling commitment to helping others (Ahmed, Khiati, & Al-Hidabi, 2024).

Internships and Work Experience: Although most common in higher education, internships and work-based learning increasingly appear at all educational levels (Johnson, 2022). These activities provide students with direct experience in professional settings, equipping them with practical skills and knowledge that will benefit their future careers.

Despite the diversity of activities under the ECA umbrella, they all share a common characteristic: they exist outside the traditional classroom setting, and their primary purpose is to

enrich the educational experience by helping students develop a wide array of competencies, including social, emotional, cognitive, and leadership skills. These activities foster personal growth, broaden students' horizons, and encourage the development of talents and abilities that may not be nurtured through the formal curriculum (Ramaila, 2025).

Importance of ECA in Educational Contexts Across Primary, Secondary, and Higher Education

Extracurricular activities are of paramount importance in educational contexts at all levels, from primary school through higher education (Javed & Srivastava, 2024). They offer unique opportunities for students to grow in ways that traditional academic subjects cannot fully address. The importance of ECA can be viewed from several perspectives, including personal development, social interaction, skill development, and career preparation:

Personal Development: ECA offers students the opportunity to explore their interests and passions beyond the constraints of the formal curriculum (Mishra & Aithal, 2023). By engaging in extracurricular activities, students can develop self-esteem, confidence, and a sense of identity (Shoaib et al., 2025). This is particularly important in the formative years of education when students are shaping their values, beliefs, and sense of self. Moreover, ECA often allows students to discover new talents and abilities that they may not have realized through academic work alone (Aliu & Aigbavboa, 2023).

Social Interaction and Networking: At every level of education, from primary school to university, ECA provides students with opportunities to interact with their peers outside the classroom environment (Dickinson, 2024). These interactions foster teamwork, collaboration, and communication, enabling students to develop essential social skills (Javed & Srivastava, 2024). In many cases, extracurricular involvement enables students to form lasting friendships and connections that extend beyond the school environment. Additionally, these activities often encourage the development of leadership and mentoring skills as students take on roles such as team captains, club presidents, or volunteer coordinators (Abohela, 2022).

Skill Development: Beyond social interaction, ECA offers invaluable opportunities for students to acquire and refine skills essential for their personal and professional growth (Wu & Fernando, 2023). In sports, students learn discipline, time management, and perseverance. In the arts, they develop creativity, problem-solving abilities, and emotional intelligence. Volunteer work fosters empathy, civic responsibility, and communication skills, while internships and work placements offer real-world experience that is crucial for career development (Javed & Srivastava, 2024). These skills, often referred to as "soft skills," are highly valued by employers and are essential for success in life after school.

Career Preparation: In higher education, ECA is increasingly viewed as a way to bridge the gap between academic learning and professional work (Lumsden & Musgrave, 2023). Internships, co-op programs, and student-run organizations provide students with hands-on experience that prepares them for the workforce (Karim, 2021). By engaging in these activities, students not only gain practical knowledge but also develop a professional network that can open doors to future employment opportunities. Even in primary and secondary education, early

exposure to leadership, teamwork, and communication through ECA can help students lay the groundwork for future career success (Bussu & Moran, 2024).

Mental Health and Well-being: In recent years, there has been growing recognition of the role that ECA play in supporting students' mental health and well-being (Boone et al., 2023). Activities such as sports, art, and volunteering have been shown to reduce stress, anxiety, and depression by providing students with positive outlets for self-expression and physical activity. In an increasingly pressure-filled academic environment, ECA offers students the opportunity to unwind, relax, and maintain a healthy balance between academic work and personal interests (Brown et al., 2025).

Historical View: The Shift from Academic Achievement to Holistic Education

Traditionally, the primary focus of educational systems worldwide has been academic achievement. Schools and universities have long emphasized subjects such as mathematics, literature, and science as core markers of a student's success (Nasir et al., 2024). Academic performance has been seen as the most important measure of a student's ability, often determining their future opportunities in higher education and employment (Alqahtani et al., 2023).

However, over the past few decades, there has been a growing awareness that academic achievement alone does not provide a complete picture of a student's abilities or potential (Alam & Mohanty, 2023). The increasing recognition of the value of non-academic pursuits has led to a shift in educational philosophies, promoting a more holistic approach to student development (Lee et al., 2022). Educators and policymakers have begun to understand that students need more than just strong grades to succeed in life; they need to develop skills that are fostered through extracurricular engagement. This shift is reflected in educational reforms worldwide. In many countries, schools are now required to offer a diverse range of extracurricular activities, and the importance of such activities is often emphasized in national curricula (Rasidi et al., 2025). Universities have also begun to value extracurricular involvement when assessing applicants, recognizing that leadership, teamwork, and community service are just as important as academic performance in preparing students for success in the 21st century (Chapman et al., 2023). Moreover, studies have shown that students who engage in ECA tend to perform better academically, as they develop better time-management skills and a greater sense of discipline (Ribeiro et al., 2024). This has led to the recognition that extracurricular activities are not merely supplementary but integral to a student's overall educational experience. Consequently, both academic and non-academic achievements are now seen as complementary rather than competing aspects of student development (Hui & Ip, 2021).

Significance of Extracurricular Activities Beyond Academics

Extracurricular activities (ECA) are increasingly recognized as vital to the holistic development of students, providing essential benefits that go beyond academic success (King et al., 2021). While academic achievement remains a cornerstone of educational systems, the significance of ECA lies in their ability to foster emotional, social, and cognitive growth, which are critical aspects of a student's overall development (Luis, 2023). In today's fast-paced and interconnected world, the skills and experiences gained through participation in extracurricular activities are indispensable in preparing students for the complexities of both personal and professional life (Buckley & Lee, 2021).

Emotional Development

ECA provides students with opportunities to participate in activities that foster emotional intelligence and resilience (Năstasă et al., 2022). Through sports, arts, volunteering, and leadership roles, students learn to navigate successes and setbacks, manage stress, and build self-confidence. For example, team sports not only enhance physical health but also encourage collaboration and the development of empathy, as students work towards common goals and experience shared emotions. Similarly, artistic pursuits such as music and drama allow students to express themselves creatively and develop a greater sense of emotional awareness. These emotional competencies are crucial in developing well-rounded individuals who can effectively manage their emotions and relationships (Abdelrahman et al., 2025).

Social Development

One of the most notable benefits of ECA is the development of social skills. Participation in clubs, community service, and collaborative activities provides students with the chance to interact with their peers outside the traditional academic environment (Wu & Fernando, 2023). Through these interactions, students develop vital communication skills, learn effective conflict resolution strategies, and cultivate a sense of belonging (Abohela, 2022). These experiences are crucial in helping students develop social networks, which can provide support during both academic and personal challenges. Moreover, extracurricular involvement allows students to connect with diverse groups of people, promoting cultural awareness, inclusivity, and teamwork (Si, 2025).

Cognitive Development

ECA also plays a pivotal role in cognitive development by encouraging critical thinking, creativity, and problem-solving skills (Wu & Fernando, 2023). Whether participating in a debate club, coding competition, or a volunteer project, students are often required to think analytically, creatively, and strategically. These activities stimulate intellectual curiosity and encourage students to approach challenges from multiple perspectives, fostering a deeper understanding of complex concepts that may not be covered in the classroom (Javed & Srivastava, 2024). In this way, ECA complements academic learning by offering real-world applications of knowledge and skills.

Recent Trends in Educational Policies

In recent years, educational policies worldwide have increasingly emphasized the value of holistic education, which integrates both academic and non-academic pursuits (Matheny et al., 2023). Policymakers recognize that developing well-rounded students who are emotionally intelligent, socially adept, and cognitively capable requires more than just academic rigor (Kassaw et al., 2024). Many education systems now actively encourage schools to provide a variety of extracurricular opportunities to foster these aspects of student development (Gage & Dijk, 2022). As a result, the importance of ECA is being integrated into curricular frameworks, with schools investing in programs that encourage student participation outside the classroom.

Purpose of this Literature Review

The purpose of this literature review is to present the broader benefits of extracurricular activities beyond academic success. By reviewing recent literature and trends, this review aims

to highlight how ECAs contribute to the emotional, social, and cognitive development of students, positioning them as integral to a well-rounded education. In doing so, this literature review seeks to support the growing recognition of the importance of ECA in preparing students for life beyond school, advocating for educational systems that place equal value on both academic and extracurricular achievements.

Literature Review

Extracurricular activities (ECAs) have long been recognized for their importance in shaping students' educational experiences, and recent research has highlighted their impact on cognitive, emotional, and social development. This literature review examines the theoretical frameworks supporting the significance of ECA, explores their benefits in various developmental domains, and highlights research on their broader impact, including academic performance, career development, and student well-being. The review focuses on studies published between 2021 and 2025, reflecting the most recent findings in this area of educational research.

Overview of Theories Related to ECA

Several psychological and educational theories provide valuable insights into how and why extracurricular activities contribute to student development. These theories suggest that participation in ECA not only supplements academic learning but also fosters critical life skills and personal growth.

Social Learning Theory

Albert Bandura's Social Learning Theory (1977) posits that individuals learn through observation, imitation, and modeling (McLeod, 2011). In the context of ECA, students engage in social interactions that facilitate the development of behaviors, attitudes, and skills. For instance, when students participate in group activities such as sports or volunteer projects, they observe and imitate positive behaviors, including teamwork, leadership, and effective communication (Hammoda, 2025). Through this process, students internalize these behaviors and apply them in various contexts, thereby enhancing their social competence and interpersonal relationships. Research by Cortellazzo et al. (2021) supports this theory, demonstrating that students involved in team sports develop enhanced cooperation and communication skills, which can be applied in both academic and personal contexts.

Self-Determination Theory (SDT)

Self-Determination Theory (Dong, 2025) focuses on the motivation behind the choices people make without external influence. According to SDT, engaging in activities for personal satisfaction and fulfillment through intrinsic motivation leads to enhanced performance, learning, and well-being. ECAs are often intrinsically motivating because they align with students' personal interests and passions. For example, students who participate in music, drama, or environmental clubs often do so out of a genuine interest in the activity, which fosters a sense of autonomy and competence. Lee et al. (2022) demonstrated that students who are intrinsically motivated to participate in extracurricular activities are more likely to develop persistence and resilience, qualities that contribute to both academic success and personal growth.

Bio-ecological Model of Human Development

The Bio-ecological Model of Human Development, introduced by Liu (2021) and Burakgazi (2025), emphasizes the dynamic interaction between individuals and their

environments. According to this model, development is influenced by multiple layers of environmental factors, ranging from immediate settings, such as family and school, to broader societal influences. In the context of ECA, Bronfenbrenner's model suggests that extracurricular activities serve as critical settings where students interact with peers, mentors, and the broader community (Veiga et al., 2023). These interactions provide opportunities for students to develop new competencies and social connections, which, in turn, impact their cognitive, emotional, and social growth. The involvement in ECA extends beyond the classroom environment, shaping students' development in a holistic manner.

Benefits of ECA on Cognitive Development

ECAs play a significant role in enhancing students' cognitive abilities, contributing to the development of critical thinking, problem-solving, and creativity (Javed & Srivastava, 2024). These cognitive skills are essential not only for academic success but also for navigating the complex challenges of the real world.

Enhancing Critical Thinking and Problem-Solving

Research has shown that ECA helps develop critical thinking and problem-solving skills by encouraging students to engage in activities that require active decision-making and strategic planning (Amanda et al., 2024). For example, students who participate in debate clubs or academic competitions, such as science fairs, are tasked with analyzing complex issues, formulating arguments, and finding innovative solutions. These activities require students to think critically, evaluate different perspectives, and synthesize information effectively, which can be applied to both academic tasks and life challenges (Xu et al., 2023). (Manuba et al., 2022) found that students involved in debate and problem-solving clubs demonstrated improved analytical thinking and reasoning skills, which also enhanced their academic performance in subjects like mathematics and literature.

Improved Academic Performance and Cognitive Abilities

While ECAs are often viewed as supplementary to formal education, studies have indicated that students who participate in these activities tend to perform better academically. For instance, a study by Lee et al. (2022) found that students who engaged in structured extracurricular activities such as sports and academic clubs exhibited higher grades and better test scores. The discipline and time-management skills developed through extracurricular involvement are linked to more efficient study habits, which contribute to improved academic outcomes (Shi & Qu, 2021). Moreover, participation in activities such as music or drama has been associated with enhanced cognitive abilities, including memory, focus, and pattern recognition, all of which are beneficial to learning. As reported by Nahar (2022), students in music programs demonstrated improved spatial-temporal skills, which translated to better performance in subjects such as mathematics.

Development of Social and Emotional Skills through ECA

ECA are particularly beneficial in fostering the development of social and emotional skills, which are essential for building relationships, managing emotions, and navigating social challenges (Javed & Srivastava, 2024).

Social and Interpersonal Skills

Team sports, community service, and peer mentoring programs are particularly effective in developing communication, empathy, and leadership skills. Through team sports, students learn the importance of cooperation and collective goals, while also developing leadership skills when taking on team captain or coach roles. These activities require students to collaborate with diverse individuals, resolve conflicts, and support one another, which helps develop interpersonal skills that are valuable both inside and outside of school. Studies by Wilson & Packer (2024) have shown that students involved in team sports exhibited greater levels of empathy and communication, which in turn improved their social relationships.

Mental Health Benefits

Participation in ECA has been shown to reduce stress and anxiety while improving emotional regulation. In an increasingly demanding academic environment, students often face pressure to perform, which can lead to stress and burnout. However, research has indicated that extracurricular activities provide an important outlet for students to release tension, relax, and improve their emotional well-being. Lowry et al. (2023) conducted a study that found students engaged in sports and volunteer work had lower levels of anxiety and depression, as these activities promoted physical exercise, social engagement, and emotional expression. Additionally, the sense of achievement gained from participating in extracurricular activities fosters greater self-esteem, which is closely linked to positive mental health outcomes.

ECA and Career Development

Beyond personal and academic development, ECA significantly contributes to career preparation by helping students acquire work-related skills valued in the professional world (Kang, 2023).

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Development of Leadership, Time Management, and Organizational Skills

Through ECA, students are exposed to real-world challenges that require them to develop skills such as leadership, time management, and organization (Kang, 2023). For instance, students who serve as presidents of student organizations or lead volunteer initiatives gain valuable experience in managing teams, making decisions, and organizing events. These leadership skills are transferable to professional environments and are highly valued by employers. A study by Calandro (2024) demonstrated that students who held leadership roles in extracurricular clubs were more likely to secure internships and job opportunities after graduation, as they had developed a range of practical skills that are essential for success in the workplace.

Impact on Career Outcomes and Employability

Participation in ECA can also enhance employability by providing students with networking opportunities and practical experience (Nghia et al., 2022). Internships, for example, allow students to apply academic knowledge in a real-world setting, gaining insight into potential career paths while building professional networks. Research by Chen et al. (2020) found that students who engaged in internships during their studies were more likely to secure full-time employment within six months of graduation, as they had gained industry-specific skills and built connections that facilitated their job search.

ECA and Student Well-being

ECA plays a key role in fostering resilience and coping strategies, which are crucial for student well-being.

Fostering Resilience and Coping Strategies

The challenges faced in extracurricular activities, whether in sports, the arts, or volunteer work, often require students to demonstrate resilience, perseverance, and problem-solving abilities (De la Fuente et al., 2021). Overcoming obstacles in these activities fosters a sense of accomplishment and self-efficacy, which contributes to overall well-being. (Falon et al., 2021) found that students who participated in extracurricular activities exhibited greater resilience when faced with academic or personal challenges, as they had developed coping strategies through their engagement in non-academic activities.

Improved Mental Health and Overall Well-being

Research consistently supports the idea that participation in ECA enhances mental health and well-being (Worsley et al., 2022). Students who participate in extracurricular activities tend to report lower levels of stress and higher satisfaction with their educational experience. These activities provide students with a sense of purpose, belonging, and achievement, which are integral to mental health. By encouraging emotional expression, social connection, and physical activity, ECA serves as a buffer against the mental health challenges that many students face during their academic journeys (Duffy & Pham, 2025).

This literature review highlights the multifaceted benefits of extracurricular activities, which contribute to students' cognitive, social, emotional, and career development. Through engagement in ECA, students acquire critical life skills that complement academic learning and prepare them for future success. Research over the past few years has increasingly recognized the importance of extracurricular engagement in fostering well-rounded individuals who are not only academically proficient but also emotionally resilient, socially skilled, and career-ready.

Methodology

This literature review adopts a qualitative review approach to synthesize the findings from recent research on the broader benefits of extracurricular activities (ECA) beyond academic achievement. The objective is to identify key themes and trends regarding how ECA contributes to students' emotional, social, cognitive, and career development. This section outlines the research design, data collection procedures, inclusion criteria, and data analysis methods that guide this systematic review.

A systematic review is employed to synthesize findings from a diverse range of studies, including experimental, longitudinal, and case studies. This literature review examines the diverse effects of extracurricular participation on students' comprehensive development, with a particular emphasis on social, emotional, and cognitive outcomes, as well as career-related skills and overall well-being.

The review is intended to provide an integrated overview of the current state of knowledge regarding the non-academic benefits of ECA. By analyzing a wide array of studies, this literature review aims to highlight the evolving understanding of the importance of ECA in shaping well-rounded individuals who are prepared not only for academic success but also for social integration, emotional regulation, and professional achievement.

The information for this literature review is collected through a systematic review of peer-reviewed journal articles and official reports from educational institutions. The review focuses on studies published between 2021 and 2025 to ensure that the findings reflect the most current trends and developments in educational research.

To ensure comprehensive coverage of the topic, the review includes sources from a variety of disciplines, including education, psychology, sociology, and career development. This approach helps to capture the broad and multifaceted nature of extracurricular activities and their impact on student development. Specifically, the following types of literature are included:

Peer-Reviewed Journal Articles: Research articles published in high-impact journals related to education, psychology, and youth development. These articles are selected for their rigorous methodology, relevance to the research questions, and contribution to the understanding of ECA.
Reports from Educational Institutions: Policy reports, institutional studies, and government-funded research that explore the role of ECA in schools and universities, as well as their contribution to student well-being and academic performance.
The primary focus of the review is on studies that provide empirical evidence regarding the effects of ECA on students' development beyond academics. This includes research on social skills, emotional intelligence, leadership abilities, and career readiness, as well as studies on the mental health benefits of participating in extracurricular activities.

Inclusion Criteria

To ensure the relevance and quality of the studies included in the review, the following inclusion criteria are applied:
Focus on Non-Academic Outcomes: Only studies that examine the outcomes of extracurricular involvement on areas other than academic achievement are included. This encompasses social, emotional, cognitive, and career development, as well as the mental health benefits associated with participation in ECA.
Publication Date: Studies published between 2021 and 2025 are prioritized to ensure that the findings reflect the most recent trends and shifts in educational practices, policies, and research. This also ensures that the review captures the latest evidence on the evolving role of ECA in modern education systems.
Study Type: This review includes only empirical studies, such as experimental, longitudinal, and case studies. These types of studies provide robust evidence of the impact of ECA on student outcomes. Qualitative and mixed-methods studies are included to provide rich, contextual insights into how ECA influences various aspects of student development.
Language: Studies published in English are included to ensure accessibility and clarity in synthesizing the findings.

Data Analysis

Data analysis for this review follows a thematic synthesis approach, which allows for the identification of recurring themes and patterns across studies (Jowsey et al., 2021). The goal of thematic synthesis is to integrate and summarize the findings from different studies while identifying commonalities and divergences in the evidence regarding the impact of ECA on students' development.

Thematic Framework

The data analysis is structured around key themes related to the non-academic benefits of ECA. These themes, derived from the literature, are used to organize and interpret the findings. The primary themes explored in this review include:

Skill Development: This theme encompasses the development of social, emotional, cognitive, and leadership skills through extracurricular participation. The analysis focuses on how ECA helps students develop essential life skills such as communication, empathy, time management, problem-solving, and teamwork.

Mental Health and Emotional Well-being: This theme examines the role of ECA in mitigating stress, anxiety, and depression, while also promoting resilience, self-esteem, and emotional regulation. Studies examining the mental health benefits of ECA, such as improved emotional well-being and increased life satisfaction, are analyzed under this theme.

Career Readiness and Employability: This theme focuses on how ECA contributes to the development of work-related skills, including leadership, time management, and organizational abilities. The analysis also examines the impact of ECA on long-term career outcomes, employability, and the development of professional networks.

Social Skills and Interpersonal Development: This theme encompasses the development of social competence through extracurricular activities, including enhanced communication skills, empathy, and the ability to collaborate effectively with peers. It also includes the role of ECA in fostering a sense of community and belonging.

Once the key themes are identified, the findings are synthesized to provide a comprehensive understanding of the broader benefits of ECA. The synthesis includes both quantitative and qualitative data from the studies, integrating statistical findings with descriptive insights into the experiences of students participating in ECA. In cases where studies report conflicting findings, the analysis highlights these differences and explores possible explanations for the discrepancies.

To ensure rigor and transparency, the data analysis process involves cross-checking the findings against the inclusion criteria and reviewing the methodology of each study to assess its quality and relevance. This process allows for a clear and coherent presentation of the evidence, with a focus on the real-world implications of ECA for student development.

The methodology outlined in this paper provides a robust framework for synthesizing the findings of recent research on the non-academic benefits of extracurricular activities. By systematically reviewing studies published between 2021 and 2025, this review aims to contribute to a deeper understanding of how ECA supports the holistic development of students. Through thematic synthesis, the analysis revealed key trends and insights that can inform educational practice, policy, and future research in the field of extracurricular engagement.

Results

This section presents the key findings derived from the literature review of studies conducted between 2021 and 2025 on the broader benefits of extracurricular activities (ECA). The review synthesizes evidence from various sources, highlighting the positive impact of ECA on students' well-being, cognitive development, mental health, social skills, and career preparedness. Several clear patterns emerge, underscoring the role of ECA in fostering personal growth, academic success, and overall life satisfaction.

Key Findings from the Literature

Positive Correlation Between ECA and Overall Well-Being and Academic Success

A central finding across the reviewed studies is that students involved in extracurricular activities report better overall well-being and academic outcomes compared to their peers who do not engage in such activities. For instance, a study by Lee et al. (2022) found that students participating in a range of extracurricular activities, including sports, clubs, and volunteering, exhibited higher levels of life satisfaction, better mental health, and greater academic achievement. These students showed higher GPA scores and were more likely to stay engaged in school, suggesting that ECA contributes not only to emotional and social well-being but also enhances academic success.

Moreover, involvement in extracurricular activities is shown to provide students with a sense of purpose and motivation, which positively influences their academic performance. According to de los Santos (2021), students involved in leadership roles within clubs and organizations often demonstrate improved organizational skills, which in turn lead to more effective study habits and better academic outcomes.

Development of Leadership, Teamwork, and Problem-Solving Skills

Another recurring theme is the development of key life skills such as leadership, teamwork, and problem-solving through extracurricular participation. ECA, particularly team-based activities such as sports, student organizations, and volunteer work, encourages students to collaborate, communicate, and work towards common goals.

Research by Dong (2025) found that students who participated in team sports developed not only physical fitness but also crucial leadership and teamwork skills. These students reported greater self-confidence and were more likely to assume leadership roles in other areas of their lives, including academic settings. Similarly, involvement in student organizations and clubs cultivates problem-solving abilities as students navigate challenges and work together to achieve their goals. These skills have lasting benefits, as they are transferable to both academic tasks and professional environments.

Improved Time Management and Self-Efficacy

In addition to social and leadership skills, participation in ECA enhances time management and self-efficacy. Students who balanced extracurricular commitments with academic work demonstrated superior time-management skills, as they were required to organize their schedules efficiently to meet the demands of both academic and extracurricular activities. The experience of managing multiple responsibilities, such as schoolwork, sports practices, and volunteer projects, fosters a sense of self-efficacy, the belief that one can achieve goals through effort and perseverance. Students involved in ECA often report feeling more in control of their time and tasks, which boosts their confidence and motivation to succeed. This increased self-efficacy is associated with higher academic performance and a greater ability to manage challenges in other areas of life.

The Role of ECA in Student Mental Health

Reduced Anxiety and Depression

A significant body of research highlights the positive impact of ECA on students' mental health, particularly in terms of reducing anxiety and depression. Several studies have demonstrated that regular participation in extracurricular activities offers students valuable

outlets for stress relief and emotional expression. For example, students who engaged in extracurricular activities, particularly sports and music, experienced lower levels of anxiety and depression compared to their peers who were less involved. The physical activity associated with sports helps reduce the physical symptoms of anxiety, while creative pursuits like music and drama provide emotional release and a sense of accomplishment.

The social interaction fostered by ECA also plays a critical role in promoting mental well-being. Students who participated in group activities reported feeling more connected to their peers, which contributed to a reduction in feelings of loneliness and isolation. The sense of belonging that comes from being part of a team or club is crucial for students' mental health, as it provides a support network and a sense of community.

Increased Feelings of Belonging and Community

The feelings of belonging and connection that come with extracurricular involvement are crucial for students' emotional and social well-being. Participation in ECA provides students with a sense of identity and connection to others who share similar interests and values. This feeling of belonging can protect against the social isolation and stress that many students experience, particularly in high-pressure academic environments.For instance, students involved in volunteer work or community service often report a heightened sense of social responsibility and a stronger connection to their community. These students are more likely to engage in pro-social behaviors and develop lasting friendships with peers who share similar interests in social causes. As reported, community engagement through volunteering fosters a sense of purpose and fulfillment, contributing significantly to overall well-being.

Examples of Specific ECA and Their Impact

Sports Programs and Their Positive Effects on Resilience and Teamwork

Sports programs are among the most widely studied forms of extracurricular activities, and research consistently demonstrates that they have a positive impact on students' resilience, teamwork, and leadership abilities. Participation in team sports, in particular, provides students with opportunities to develop perseverance, discipline, and cooperation.
In addition to physical benefits, sports foster emotional resilience by helping students cope with setbacks such as losing a game or facing personal challenges. The teamwork involved in sports teaches students how to collaborate, resolve conflicts, and communicate effectively. Research has shown that students involved in competitive sports develop stronger leadership and social skills, which contribute to their academic and personal success. Furthermore, sports programs promote a healthy lifestyle, reducing stress and enhancing overall well-being.

Music, Drama, and Arts Programs Contributing to Creative and Emotional Intelligence

Involvement in music, drama, and other arts programs offers students unique opportunities for creative expression and emotional growth. These activities encourage students to think outside the box, solve problems creatively, and express their emotions in healthy and constructive ways.

Research found that students involved in music programs reported higher levels of emotional intelligence, including better empathy, emotional regulation, and self-awareness. Similarly, drama programs help students develop strong communication skills and an understanding of different perspectives, as they engage in role-playing and character exploration.

These programs foster emotional expression, which is especially important for students facing personal challenges or stress.

Volunteer Work Promoting Civic Responsibility and Community Engagement

Volunteer work has long been recognized for its positive effects on personal development, and recent research continues to support its value in fostering a sense of civic responsibility and community engagement. Students who participate in volunteer activities report feeling more connected to their community and more empowered to make a difference in the world around them.

Studies highlighted the mental health benefits of volunteering, including a reduced sense of loneliness and increased feelings of fulfillment. Volunteering promotes pro-social behaviors and encourages students to develop empathy for others, which enhances their social skills and emotional intelligence. Furthermore, volunteering offers students valuable real-world experiences that can enhance their career development and foster professional networks.

Conclusion

The results of this literature review underscore the significant role of extracurricular activities in fostering students' holistic development. Participation in ECA is associated with improved academic outcomes, enhanced mental health, and increased cognitive, social, and emotional skills. Clear patterns emerge showing that students who engage in extracurricular activities report higher levels of well-being, stronger leadership and teamwork abilities, and greater resilience. Specific activities, such as sports, music, drama, and volunteer work, contribute to students' growth in various areas, including creativity, emotional intelligence, community engagement, and career readiness. These findings support the growing recognition of the value of extracurricular activities as integral components of a comprehensive education that nurtures students' full potential.

Discussion

This section interprets the findings from the literature review and considers their implications for educational practice, policy, and future research. The evidence synthesized in the previous section highlights the essential role of extracurricular activities (ECA) in developing students’ social, emotional, and cognitive skills. These activities provide an important counterbalance to the academic pressures that students face, offering critical opportunities for self-expression, socialization, and overall well-being. However, while the benefits of ECA are well-documented, the discussion also highlights challenges related to participation, as well as the limitations of existing research, suggesting areas for future investigation.

Interpretation of Findings

The findings from the literature suggest that ECA plays an indispensable role in promoting students' holistic development, contributing to their social, emotional, and cognitive growth. In particular, ECA offers a crucial outlet for students to develop competencies that are not typically emphasized within the traditional academic curriculum. These competencies include leadership, communication, empathy, resilience, problem-solving, and creativity, which are increasingly seen as essential for success in both academic and professional settings.

Social and Emotional Development

One of the most prominent conclusions from the literature is that ECA has a significant impact on students' social and emotional well-being. Activities such as sports, volunteer work, and group clubs offer students opportunities for socialization and peer interaction, which are essential for developing interpersonal relationships and emotional intelligence. As highlighted, students who participate in team-based activities develop stronger communication and collaboration skills, which are essential not only in school but also in personal and professional settings. Additionally, the social bonds formed through ECA create a sense of belonging, which is critical in helping students manage feelings of isolation and stress, especially in the context of increasingly competitive academic environments.

Emotional regulation is another critical aspect fostered by extracurricular participation. The experience of overcoming setbacks, whether in a sports competition or a challenging volunteer project, builds resilience and enhances emotional maturity. The ability to cope with failure and persevere in the face of adversity is a skill that extends far beyond school and is crucial for navigating the challenges of adulthood. Recent studies reinforce this, showing that students who engage in ECA exhibit lower levels of anxiety and depression, highlighting the role of ECA in providing mental health benefits.

Cognitive Development and Academic Performance

The evidence also suggests a positive relationship between ECA participation and cognitive development, which indirectly contributes to better academic outcomes. ECA, particularly those that require critical thinking and problem-solving, helps students strengthen their cognitive skills. Participation in activities such as debate clubs, academic competitions, and the arts encourages students to engage in deeper thinking and explore alternative solutions to problems. The findings suggest that students involved in such activities demonstrate improved academic performance, particularly in subjects that require creativity and critical analysis, such as mathematics, literature, and social sciences.

Moreover, ECA teaches students time management and organizational skills, as they must balance their academic workload with extracurricular commitments. This ability to manage time effectively often translates into better academic outcomes, as students learn to prioritize tasks and work efficiently. Lee et al. (2022) found that students who engaged in extracurricular activities were more likely to exhibit self-discipline, a trait that positively influences both academic success and overall life satisfaction.

Counterbalance to Academic Pressure

In addition to fostering cognitive and emotional growth, ECA serves as a much-needed counterbalance to the academic pressures students face. As the demands of standardized testing and academic achievement continue to intensify, students often experience significant stress, anxiety, and burnout. ECA offers a reprieve from these pressures, providing students with an outlet for creativity, relaxation, and personal expression. Participating in a sports team or drama production, for example, provides not only a break from academic work but also a space for students to develop a sense of accomplishment and self-worth beyond their academic performance.

The integration of ECA into students' lives offers a more balanced and well-rounded educational experience, one that acknowledges the importance of both intellectual and emotional development. This balance is especially important in fostering students’ mental health, as

students who engage in ECA report higher levels of satisfaction with their educational experience and greater resilience in dealing with challenges.

Implications for Educational Practice

The findings from this literature review suggest several key implications for educational practice. As schools and universities continue to evolve and adapt to the needs of their students, it is increasingly clear that ECA must be considered a core component of the student experience, rather than as supplementary or optional activities.

Integration of ECA into the Curriculum

Educational institutions should integrate ECA into their curricula, providing students with structured opportunities to participate in activities outside the traditional academic framework. While many schools already offer extracurricular programs, integrating these activities into the broader educational philosophy is essential for creating a holistic learning environment. This might include offering credit for participation in certain extracurricular activities or incorporating them into the school's overall mission of fostering student development.

In universities, particularly, there is an increasing recognition that academic success alone is insufficient to prepare students for the complexities of the modern workforce. ECA offers students opportunities to develop essential leadership, teamwork, and problem-solving skills that are crucial for career readiness. Institutions that prioritize ECA as part of the student experience are more likely to produce graduates who are well-rounded, socially competent, and ready to face the challenges of a dynamic, ever-changing world.

Policy Recommendations for Supporting ECA

To fully realize the benefits of ECA, educational institutions must provide the necessary support in terms of funding, administrative resources, and time allocation. School leaders should prioritize allocating resources to support extracurricular programs, ensuring that they are accessible to all students. This includes providing funding for extracurricular clubs, sports teams, arts programs, and other student initiatives, as well as hiring staff to oversee and coordinate these activities.

Additionally, the academic calendar should be structured to allow sufficient time for students to engage in extracurricular activities without compromising their academic commitments. Scheduling conflicts between academic classes and extracurricular events are a common barrier to participation, particularly in institutions with intensive academic loads. Flexible scheduling and policies that recognize the importance of ECA in fostering student development are necessary for ensuring that all students have the opportunity to benefit from extracurricular engagement.

Challenges and Limitations

While the evidence overwhelmingly supports the benefits of ECA, several challenges and limitations hinder participation and the ability to fully assess the long-term impact of these activities.

Barriers to Participation

One of the primary barriers to participation in ECA is financial constraints. Many extracurricular activities, particularly sports and arts programs, can require significant financial investment in terms of equipment, travel, and fees. This can create disparities, where students from lower-income backgrounds may be less able to participate in certain activities, limiting their opportunities for holistic development. Financial support, scholarships, and funding for extracurricular programs can help mitigate these barriers, ensuring equitable access for all students.

Another barrier is the lack of time. Students are often stretched thin with academic responsibilities, part-time jobs, and family obligations, making it difficult to find time for extracurricular activities. Schools and universities can help address this issue by offering flexible options, such as evening or weekend programs, and by recognizing the importance of extracurricular involvement in shaping students' overall success.

Need for Longitudinal Studies

One of the key limitations in the current literature is the lack of longitudinal studies that assess the long-term impact of ECA on students' lives. While many studies provide evidence of short-term benefits, particularly in terms of academic performance and mental health, there is a need for more research that tracks the long-term outcomes of extracurricular participation. Longitudinal studies could provide deeper insights into how participation in ECA influences career trajectories, mental health over time, and long-term academic success.

Future Research Directions

Building on the findings from this review, future research should explore several areas to better understand the impact of ECA on students' development.

Exploring the Impact of Digital ECA

With the growing prevalence of digital technologies and remote learning, there is a need to investigate the impact of virtual extracurricular activities, such as online clubs, virtual volunteering, and e-sports. While digital platforms have opened new avenues for student engagement, particularly in a post-pandemic world, research is needed to assess whether these digital ECA offer the same benefits as traditional, in-person activities. Future studies should explore how online engagement influences students' social skills, emotional well-being, and cognitive development.

Investigating the Effects of ECA on Different Demographic Groups

Future research should also examine the differential effects of ECA on various demographic groups. Specifically, research could focus on first-generation college students, students from underprivileged communities, and students with disabilities, to determine how ECA can be tailored to meet the unique needs of these populations. Understanding how different groups benefit from extracurricular involvement will help schools and universities create more inclusive and supportive programs that promote equal opportunities for all students.

The findings of this literature review strongly support the conclusion that extracurricular activities are essential to fostering students' holistic development. Beyond enhancing academic performance, ECA makes a significant contribution to students' social, emotional, and cognitive development. By integrating ECA into educational curricula and providing the necessary support

and resources, schools and universities can better prepare students for both academic success and life beyond the classroom. While barriers to participation remain, targeted policy changes and further research into digital and demographic factors can help mitigate these challenges and ensure that all students can benefit from the comprehensive advantages that extracurricular activities offer.

Concluding Remarks

Extracurricular activities (ECA) are integral to the holistic development of students, providing valuable opportunities for growth that extend far beyond the confines of academic achievement. This literature review synthesizes current research on the benefits of ECA, highlighting its impact on students' social, emotional, cognitive, and career development. The evidence overwhelmingly supports the idea that ECA fosters important life skills such as leadership, teamwork, problem-solving, and time management, all of which are essential for success both in school and later in life. Furthermore, ECA plays a significant role in promoting mental health, with studies indicating that regular participation helps reduce stress, anxiety, and depression, while simultaneously fostering a sense of belonging and community.

Despite the many benefits, barriers to participation, such as financial constraints and time limitations, continue to affect many students, particularly those from underprivileged backgrounds. Addressing these barriers through policy changes and institutional support is crucial to ensuring that all students have access to the developmental advantages that ECA provides. Educational institutions must integrate ECA into their curricula as essential elements of the student experience, offering adequate funding, administrative resources, and flexibility in scheduling.

In conclusion, ECAs are essential for cultivating well-rounded individuals who are well-prepared for academic, personal, and professional success. The growing recognition of their importance necessitates further research into the long-term effects of ECAs and the exploration of digital extracurricular activities, as well as their impact on diverse demographic groups. By continuing to prioritize ECA, educational systems can better equip students with the skills, resilience, and social networks necessary for thriving in an increasingly complex and interconnected world.

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